SPP-57

SERVICE MANUAL

US Model
Canadian Model

SPECIFICATIONS

General

Frequency control	Crystal-controlled
Operation mode	FM, duplex
Operating frequency	46 MHz/2 channels 49 MHz/2 channels
Supplied accessories	AC power adaptor AC-T35 (1) Telephone line cord (1) Rechargeable battery pack BP-T16 (1) Spacers (2) Screws (2)

Handset

Power source	Rechargeable battery pack
Battery duration (After fully charged for approx. 24 hours.)	Approx. 7 days at RING ON mode Approx. 1 month at BATT SAVE mode
Dimensions	Approx. 59 × 195 × 68 mm (w/h/d) antenna excluded (Approx. $2^{5}/_{16} \times 7^{11}/_{16} \times 2^{5}/_{8}$ inches) Antenna: 106 mm ($4^{5}/_{32}$ inches)
Weight	Approx. 295 g battery included (Approx. 10 oz)

Base Unit

Power source	DC 9V from AC power adaptor
Dimensions	Approx. 101 × 39 × 227 mm (w/h/d) antenna excluded (Approx. $3^{31}/_{32} \times 1^{1}/_{2} \times 8^{15}/_{16}$ inches)
Weight	Approx. 320 g (Approx. 11 oz)

Design and specifications subject to change without notice.

CORDLESS TELEPHONE

SONY®

使用時は添付資料も参照のこと
Refer to the additional documents

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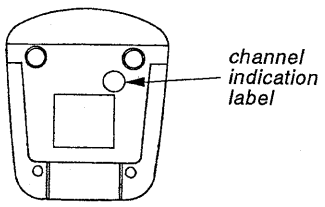
[NOTE ON REPLACEMENT]

- **Note on Repair Replacement of Crystal Oscillator**

1) On replacement of X601 – X604, X501 (on Portable Unit) and X1 – X4, X5 (on Base Unit) crystal oscillators, please use the same frequency (the same channel) parts.
2) Oscillating frequency and the channel indication on the set.

- Channel indication on the set

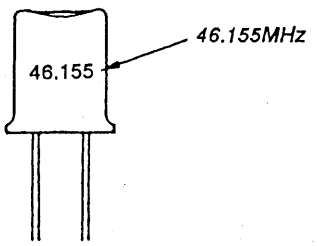
Portable Unit Section



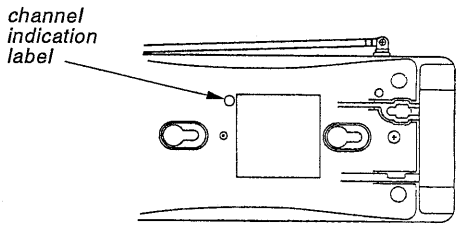
(A)		CH	(B)		X501
X602	X603		X601	X604	
46.155	16.5567	1-4	46.255	16.5900	3.583
46.175	16.6150	2-5	46.275	16.6250	3.583
46.375	16.6300	7-10	46.515	16.6567	3.583
46.415	16.6433	8-9	46.475	16.6633	3.579545

(MHz)

- Oscillating frequency indication on crystal oscillator



Base Unit Section



(A)		CH	(B)		X5
X2	X4		X1	X3	
49.215	15.5367	1-4	49.315	15.5700	3.583
49.390	15.5433	2-5	49.420	15.5766	3.583
49.435	15.6100	7-10	49.515	15.6566	3.583
49.475	15.6233	8-9	49.535	15.6433	3.583

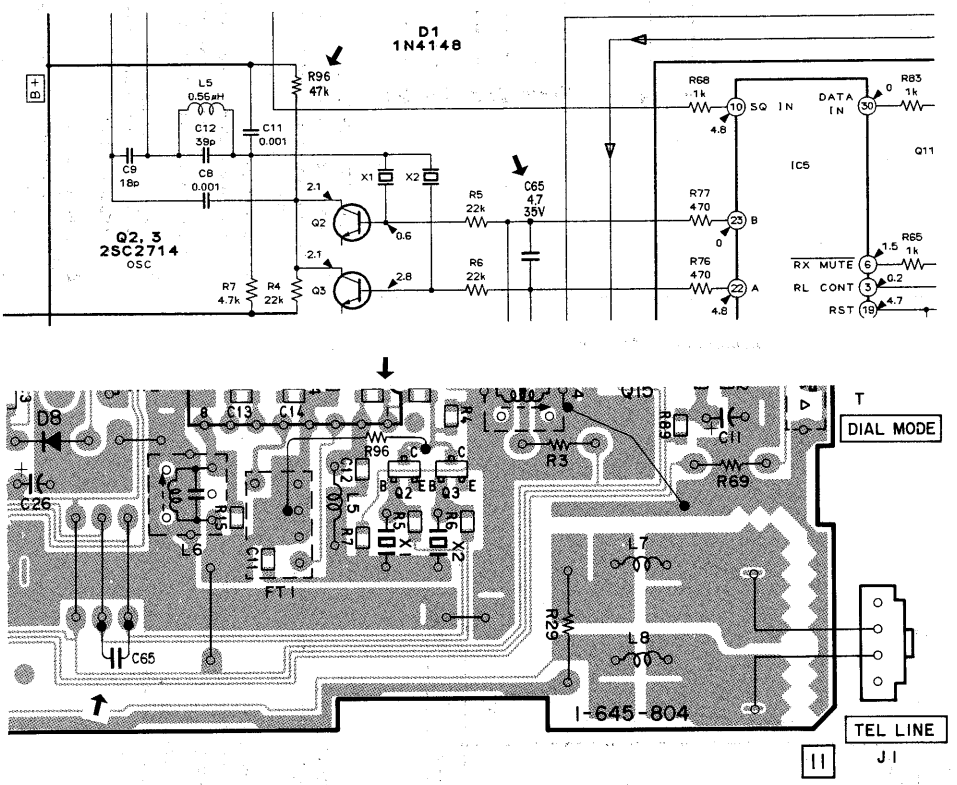
(MHz)

- **Note on Replacement of IC.**
  - **BASE MAIN BOARD IC005 LC6543H**

FORMER TYPE	LC6543H-4A12	8-759-093-84
NEW TYPE	LC6543H-4A77	8-759-170-78

1. **FORMER TYPE** **US Model: Up to Serial No. 365,000.**
   Canadian Model: Up to Serial No. 2,000.
   - **CH7-10, CH8-9 MODELS EXCLUSIVE PARTS ADDITION (BASE MAIN BOARD)**

Ref. No.	Part No.	Description
C65	1-124-768-11	ELECT (NONPOLAR) 4.7 μF 20% 50V
R96	1-249-437-11	CARBON (SMALL) 47k 5% ¼W



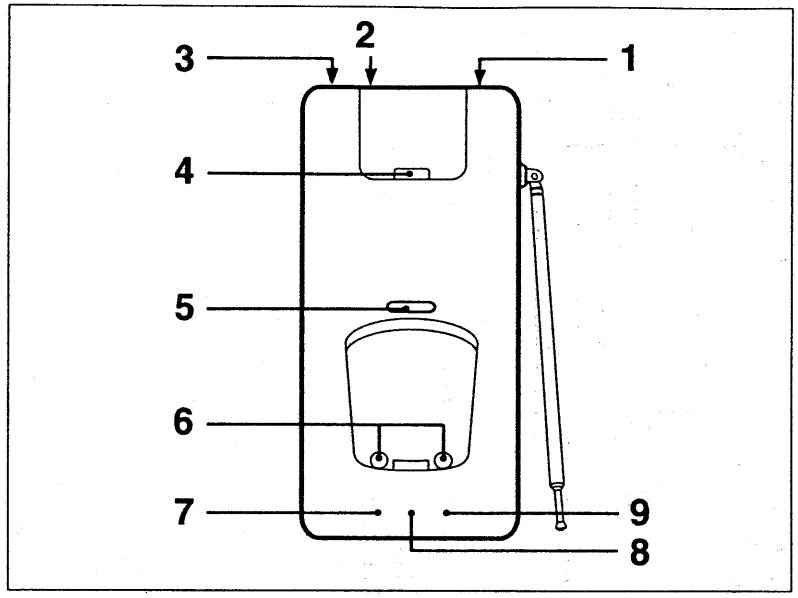
- It is not necessary to remove C65 and R96 when the former type IC005 is replaced with the new type IC.

2. **NEW TYPE** **US Model: Serial No. 365,001 and later.**
   Canadisn Model: Serial No. 2,001 and later.

This section is extracted from instruction manual.

Looking at Your Phone

Base unit



1 **DC IN 9V jack**

2 **DIAL MODE selector**
Selects pulse or tone dialing.

3 **Telephone line jack**

4 **Handset hanger hook**

5 **(PAGE) button**
Sends a page signal to the handset.

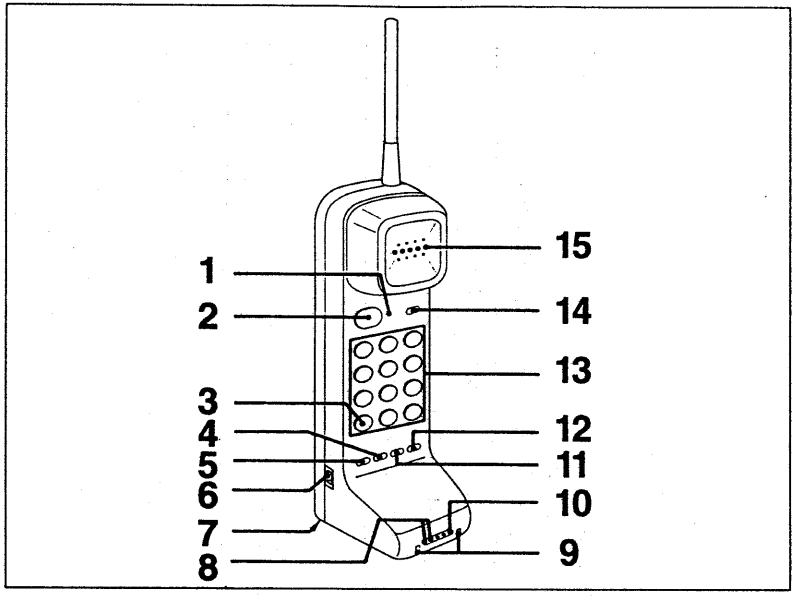
6 **Charge terminals**

7 **POWER lamp**
Lights up when power is supplied to the unit.

8 **LINE lamp**
Lights up when the telephone line is engaged.

9 **CHARGE lamp**
Lights up when the battery is being charged.

Handset



1 **TALK/BATT LOW lamp**
Indicates using the phone. Also indicates battery weak when lighting up every 3 seconds.

2 **(TALK) button**
Allows you to answer a call, access the dial tone to make a call and disconnect the line when a call is finished.

3 **(TONE) (·) button**
Temporarily switches the dialing mode from pulse to tone.

4 **(RECALL) button**
Automatically dials speed dialing numbers.

5 **(CHANNEL) button**
Selects channel 1 or channel 2 when interference noise is heard.

6 **MODE switch**
Selects RING ON mode or BATT SAVE mode. The handset will not ring on an incoming call when setting to the BATT SAVE mode.

7 **Battery compartment (rear)**

8 **Ringer speaker**

9 **Charge terminals**

10 **Microphone**

11 **(PGM) (program) button**

12 **(REDIAL/PAUSE) button**
Redials the last number called/inserts a pause in the memory dialing sequence.

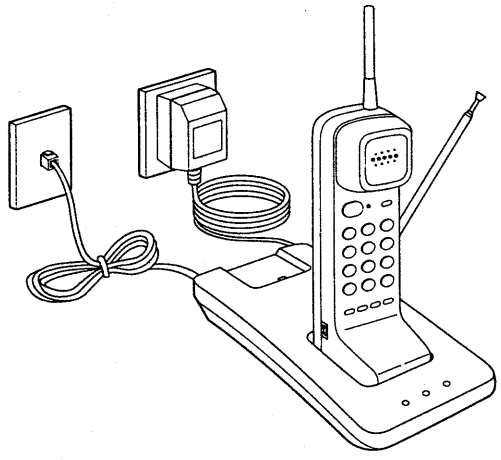
13 **Dialing keys**

14 **(FLASH) button**
Accesses call waiting (or gives you a new dial tone).

15 **Speaker**

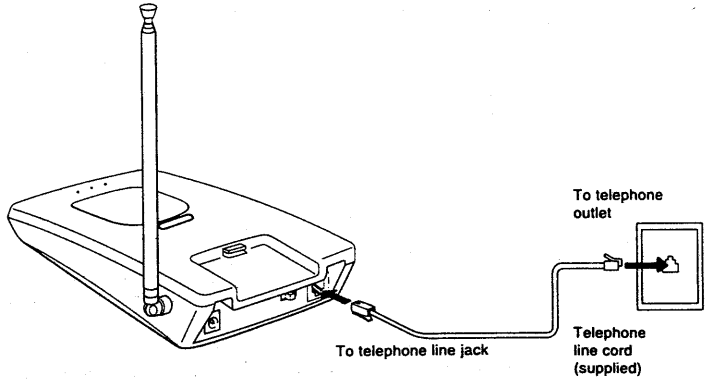
Setting up the Base Unit

Complete Set-up



Clean the battery charge contacts with a soft cloth about once a month, otherwise, Handset may not be fully charged.

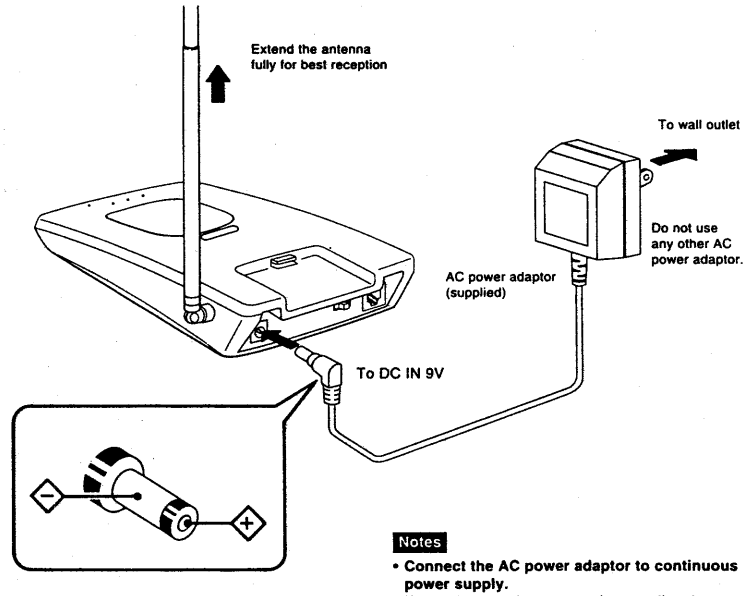
Telephone Line Connection



If your telephone jack is not a modular type, please contact your telephone company for assistance.

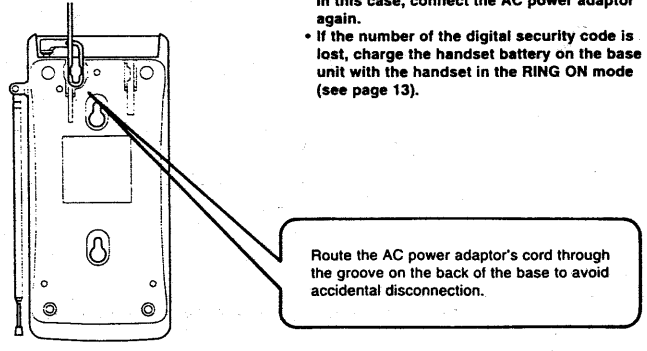
Setting up the Base Unit

Power Connection


Extend the antenna fully for best reception
To wall outlet
Do not use any other AC power adaptor.
AC power adaptor (supplied)
To DC IN 9V

Notes

- **Connect the AC power adaptor to continuous power supply.**
  If the telephone is connected to a wall outlet where power is cut off every night, the battery pack will not be charged, and all programmed numbers will be lost from memory.
- **If you connect the AC power adaptor while pressing (PAGE), the base unit will not work. In this case, connect the AC power adaptor again.**
- **If the number of the digital security code is lost, charge the handset battery on the base unit with the handset in the RING ON mode (see page 13).**



Route the AC power adaptor's cord through the groove on the back of the base to avoid accidental disconnection.

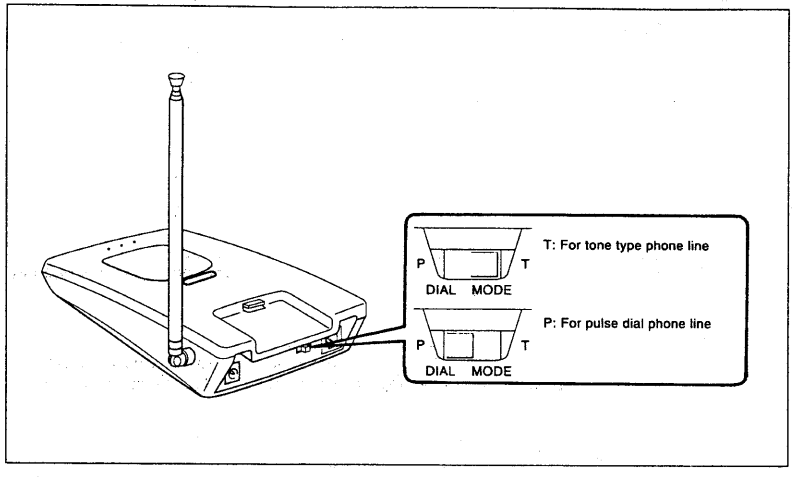
Selecting the DIAL MODE (pulse or tone)

If you do not know which setting is correct for your telephone line, check as follows.

1 Set the DIAL MODE selector located on the side of the base unit to T (tone).

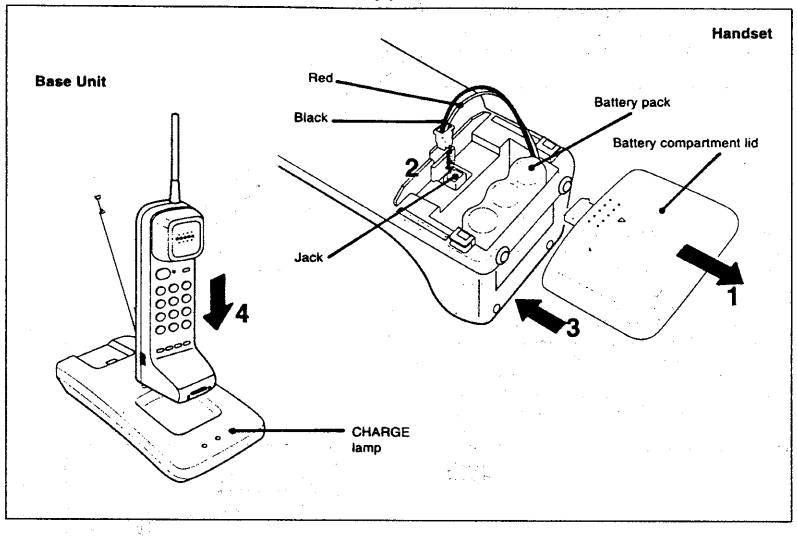
2 Make a trial call.

3 If the call is connected, leave the selector at T (tone).
Otherwise, set the selector to P (pulse).



Charging the Battery Pack for the Handset

Before initial use, charge the supplied battery pack for more than 12 hours.



To charge the battery pack

1 Remove the battery compartment lid by pushing it downward. The battery pack is packed separately in the styrofoam box.

2 Place the battery pack in the battery compartment and connect the cord correctly to the jack as shown on the above illustration.

3 Replace the battery compartment lid by pushing it upward.

4 Place the handset on the base unit and charge the battery pack for more than 12 hours.
The CHARGE lamp lights when the handset is fully seated onto the charge terminals of the base unit.

When to Charge the BATTERY

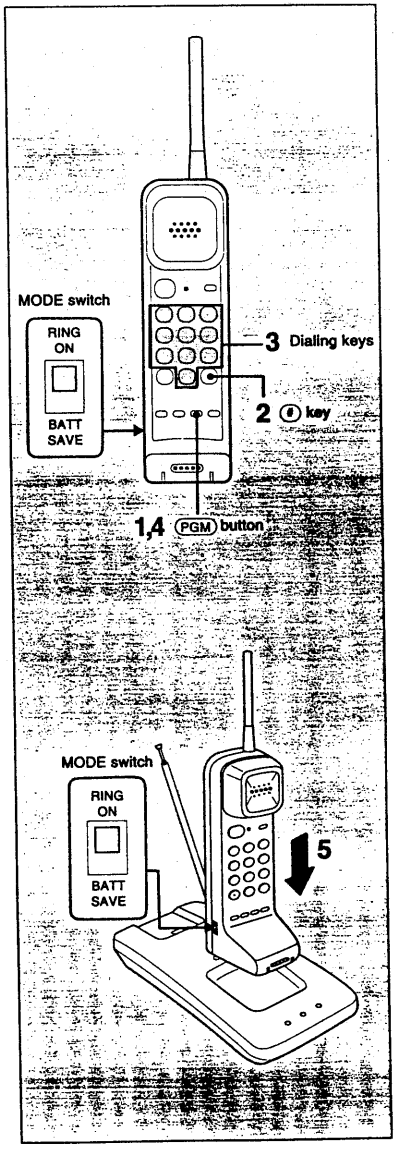
As long as the handset is placed back on the base unit after each call, the battery will be recharged continuously.

If the handset battery becomes weak
A beep tone will be heard every 3 seconds while you are on the phone.
The call will be disconnected in one minute.

Battery Life
Replace the battery pack with a new one when the operating time of the completely charged battery pack has noticeably shortened.

Note

- **If the handset is completely discharged, the digital security code will be erased and all programmed numbers will be lost from memory. To reprogram, charge the handset battery on the base unit with the handset in the RING ON mode.**



The Digital Security Code is automatically set when you initially charge the battery pack first. If you wish to change the setting, pick up the handset from the base unit and set as follows.

Make sure that the mode switch is set to RING ON position.

1 Press (PGM).
TALK lamp lights up

2 Press (#).
You will hear a confirmation beep.

3 Press any 3 digit number between 000 – 255 by using the dialing keys.

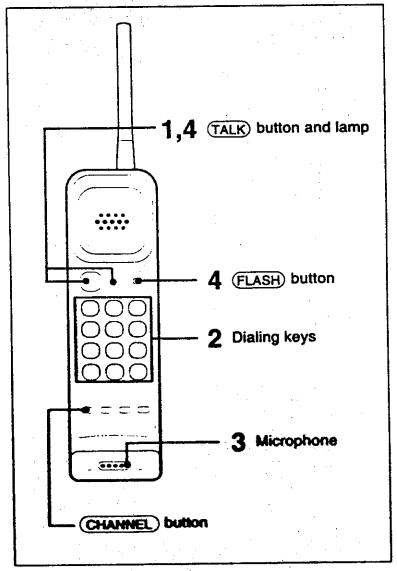
4 Press (PGM) again.
You will hear a long confirmation beep.

5 **Immediately place the handset in the base unit to complete the code change.**

This procedure will change the code in both the base unit and the handset. The code can be changed as often as desired.

Notes

- **A prolonged power failure will erase the digital security code. To reprogram, place the handset on the base unit with the handset in the RING ON mode.**
- Five short error beeps give warning if you press any number other than 000 – 255 (such as 256).



Pick up the handset from the base unit.

1 Press (TALK).
TALK lamp lights up. Confirm the dial tone.

2 Dial the number.

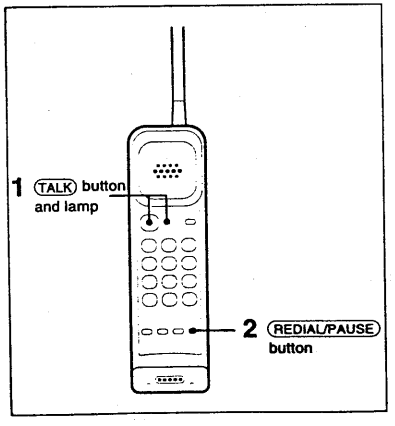
3 Talk when your party answers.

4 When you have finished, press (TALK) again or replace the handset in the base unit to disconnect. The TALK lamp goes off.
To make another call, press (FLASH) and dial again.

Note

If interference noise occurs when you press (TALK), three short alarm beeps or five short error beeps will sound. In this case, bring the handset closer to the base unit or press (CHANNEL) (see page 15).

Redialing a Number



If the line is busy when you call someone, or you want to call someone you just called, there is no need to dial the number again manually. The REDIAL/PAUSE button automatically redials the most recently dialed number.

1 Press (TALK)
TALK lamp lights up.

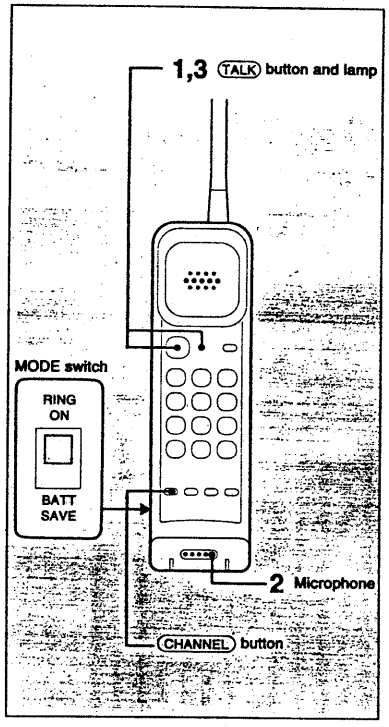
2 Press (REDIAL/PAUSE) instead of dialing the number.

Note

You can redial a phone number of up to 32 digits.

To keep the last number dialed confidential
Press (REDIAL/PAUSE) twice as soon as the call is over. This will erase the redial memory.

Receiving Calls



Ringer MODE selection

Select either RING ON mode or BATT SAVE mode using the MODE switch.
RING ON: Normal standby mode.
The handset will ring on an incoming call.
BATT (battery) SAVE: Prolong the battery duration. You can still make calls.

THE HANDSET WILL NOT RING ON AN INCOMING CALL WHEN SET TO THE BATT SAVE MODE.

Receiving Calls

1 When you hear the ring, press (TALK). TALK lamp lights up.

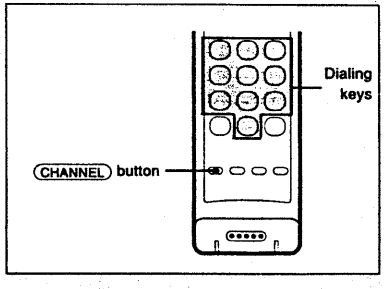
2 Speak into the microphone.

3 When you have finished, press (TALK) again or replace the handset in the base unit to disconnect.

Note

If interference noise occurs when you press (TALK), three short alarm beeps or five short error beeps will sound. In this case, bring the handset closer to the base unit or press (CHANNEL) (see below).

Using the Channel Button



You can select Channel 1 or Channel 2 by pressing (CHANNEL) when noise is heard during a conversation.

Call Waiting and Flash

If you subscribe to "call waiting service", press (FLASH) to switch from one party to the other.

Note

If you do not have this service, the line will be disconnected when (FLASH) is pressed.

Paging

To Call the Handset from the Base Unit

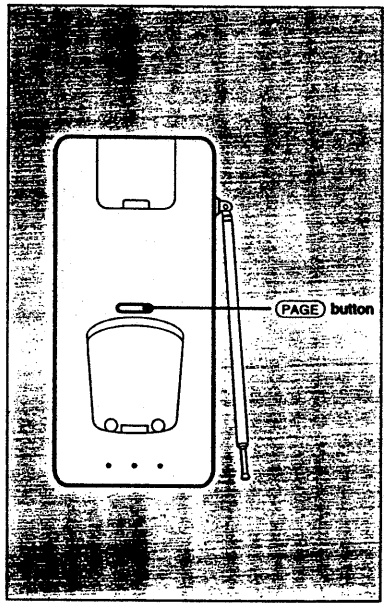
The MODE switch on the handset must be set to RING ON position.

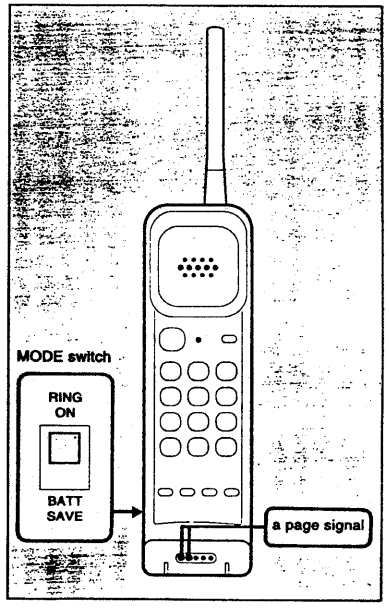
1 Press (PAGE) on the base unit.

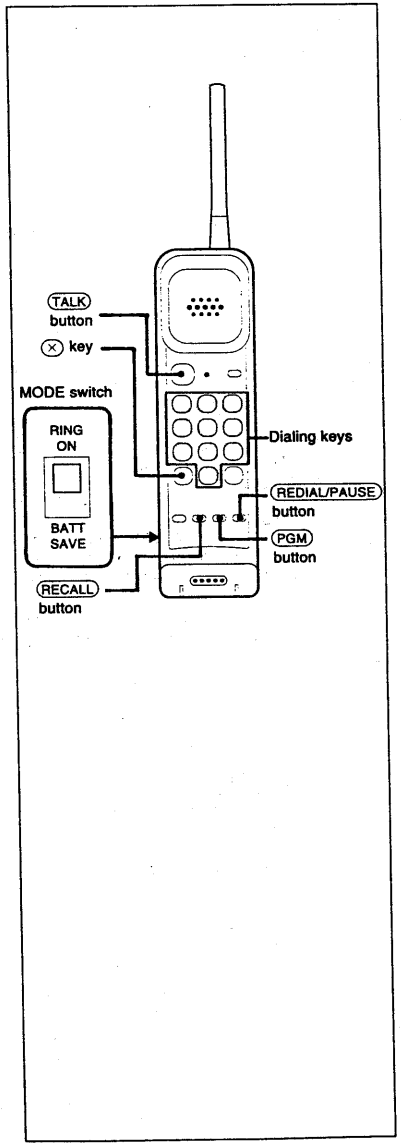
2 The handset rings several times.
When you keep (PAGE) pressed, the handset rings all the time until you release the button.

Note

- No tone will sound if the handset is in the TALK position.







You can program up to 20 numbers into memory for speed dialing (01 – 20).
You can also save the redialed number into memory, which is useful when you want to redial the number after dialing a different number.

Note

- You can program a phone number of up to 16 digits for each speed dialing button. (A ⊙ (TONE) and (REDIAL/PAUSE) will each be counted as one digit.)

Make sure that MODE switch on the handset is set to RING ON position.

Programming Numbers

1 Press (PGM).
TALK lamp lights up.

2 Press the (RECALL) and (01 – 20) for speed dialing.
You will hear a confirmation beep.

3 Dial the phone number you wish to program (or press (REDIAL/PAUSE)).

4 Press (PGM) again.
You will hear a long confirmation beep.

To change a programmed number
Program a new number using the procedure above. The old number will be erased automatically.

Notes

- If you enter a number that exceeds 16 digits, an alarm will sound. Go back to step 1.
- Do not let more than 20 seconds elapse between any two steps of the programming procedure.
- If you enter a wrong number, go back to step 1.
- You cannot program any number when receiving an incoming call.

Speed dialing

1 Press (TALK).

2 Press (RECALL).

3 Press the desired memory button. (01 – 20)

Note

If you press a button without a phone number programmed, five short error beeps will sound.

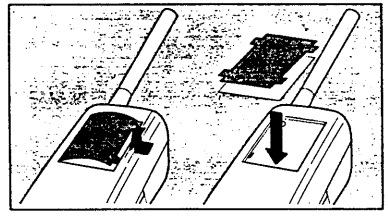
To program numbers for use with a PBX (Private Branch Exchange)

Example: (If 9 is used to access the outside line.)
Follow the usual programming procedure as shown above. Press (REDIAL/PAUSE) between the "9" and the number. An automatic 4-second pause is programmed.

Example: To program 123-4567 on the speed dialing button.

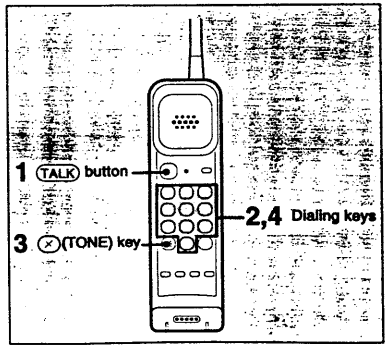
Press:
(PGM) ➡ (RECALL) ➡ speed dialing button (01 – 20) (You will hear a confirmation beep.) ➡ ⑨ ➡ (REDIAL/PAUSE) ➡ ① ② ③ ④ ⑤ ⑥ ⑦ ➡ (PGM) (You will hear a long confirmation beep.)
(A (REDIAL/PAUSE) will be counted as one digit.)

To keep a directory of what you programmed
Lift off the clear panel, take out the directory on the rear of the handset and write down the name of the person or place whose number you have programmed.
When you replace the panel, make sure the buttons protrude fully through the panel's holes.



Using Your Long-distance Service

Some services, such as MCI, Sprint and other alternative long-distance companies may require the distinct tones generated by a pushbutton (touch-tone) phone. If you have pulse-dial service, you can still access these services through a process called "mixed dialing".



1 Press (TALK).

2 Dial the access number of the service you want to use.

3 After you connected to the service, press ⊙ (TONE). (This switches your phone temporarily to emit tone signals.)

4 Dial long-distance number when instructed by the long-distance company.

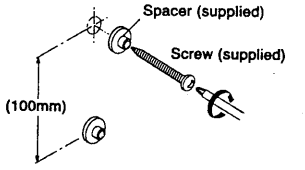
The above is a typical example. Actual sequences will carry according to the service you are using.

Mounting Your Phone on the Wall

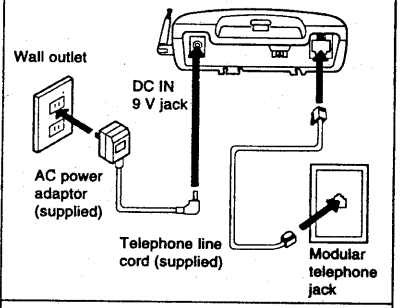
To mount your SPP-57 on the wall, use the "Wall mounting template" and mounting hardware provided with the unit.

1 Cut out the template (described at the bottom in this page) and use it as a guide for alignment of the mounting screws.

Tighten the mounting screws firmly to the wall.

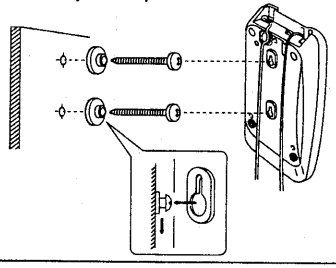


2 Connect the AC power adaptor and the telephone line cord to the base unit and the wall outlet.

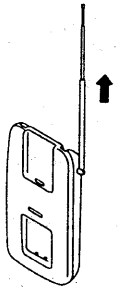


3 Insert the telephone line cord and AC power cord in the groove.

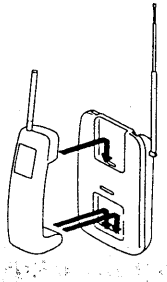
Hang up the base unit on the screws mounted on the wall until the base unit is firmly held in place.



4 Extend the antenna fully.



5 How to charge when mounted on a wall.



CUT CUT

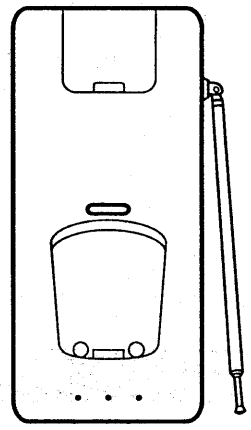
Wall mounting template

IMPORTANT:

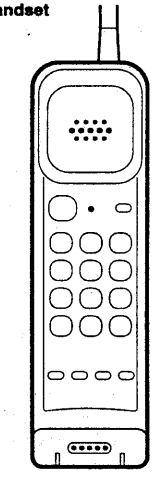
Before mounting, select a wall area of sufficient strength. If mounting on wallboard or in an area of questionable strength, locate a stud for maximum support of your telephone.

What You Get with Your Phone

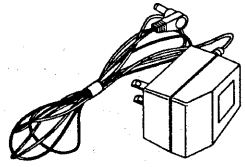
Base unit



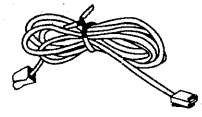
Handset



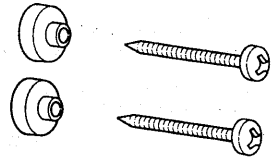
AC power adaptor (AC-T35)



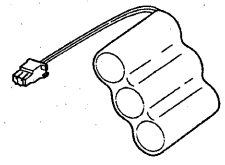
Telephone line cord



Spacers and screws



Rechargeable battery pack (BP-T16)

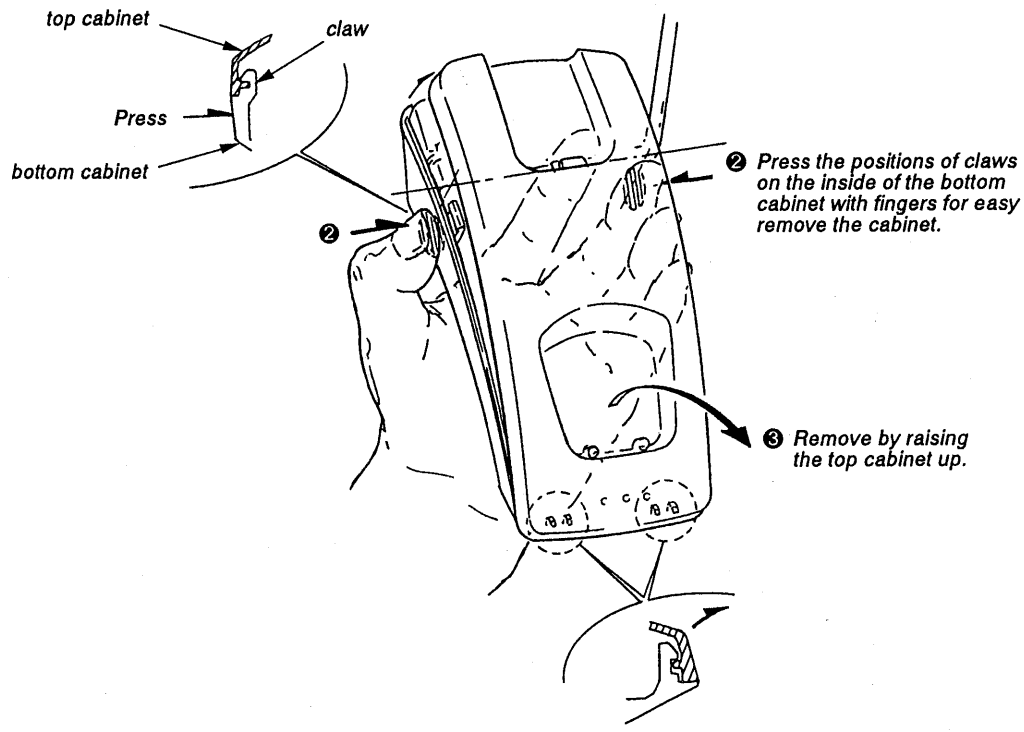


SECTION 2
DISASSEMBLY

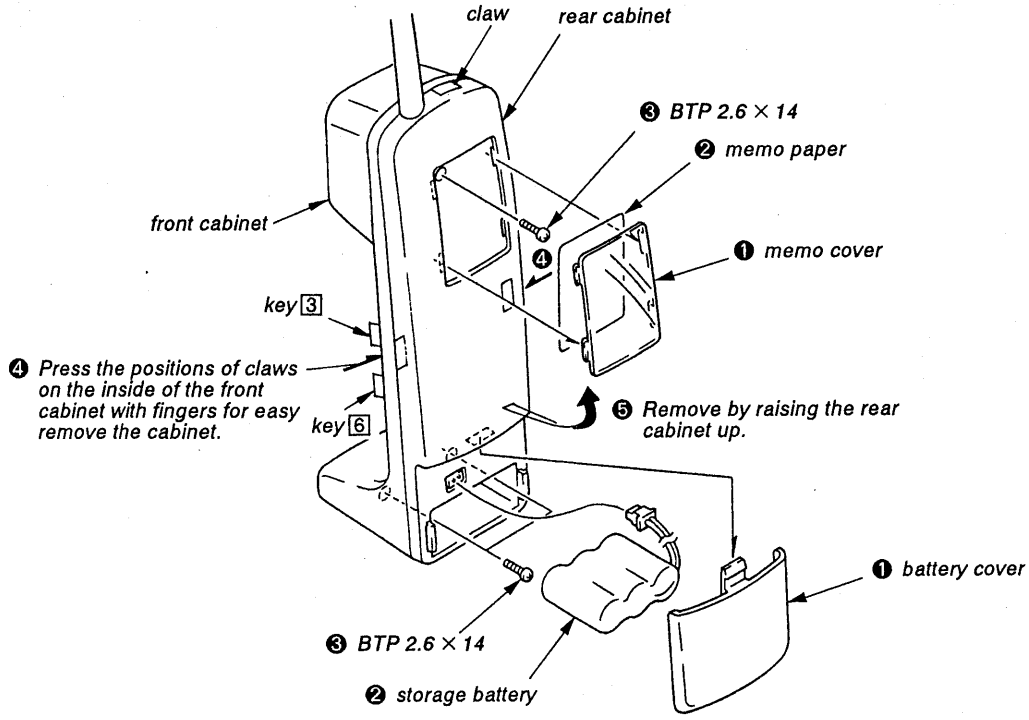
Note: Follow the disassembly procedure in the numerical order given.

BASE UNIT TOP AND BOTTOM CABINETS

❶ *Unscrew three screws BTP3 × 12 on the bottom.*


top cabinet
claw
Press
bottom cabinet
❷
❷ Press the positions of claws on the inside of the bottom cabinet with fingers for easy remove the cabinet.
❸ Remove by raising the top cabinet up.

HANDSET REAR CABINET


claw
rear cabinet
❸ BTP 2.6 × 14
❷ memo paper
front cabinet
❶ memo cover
❹
key 3
❹ Press the positions of claws on the inside of the front cabinet with fingers for easy remove the cabinet.
key 6
❺ Remove by raising the rear cabinet up.
❶ battery cover
❸ BTP 2.6 × 14
❷ storage battery

SECTION 3
ELECTRICAL ADJUSTMENTS

3-1. TEST MODES

Before performing checks or adjustments on the handset and the base unit, enter the correct test mode as follows.

3-1-1. Handset

1. To enter the test mode is turning power on or setting "MODE" switch to "RING ON" while pressing " ∗ " and "#" buttons.
2. In the test mode, "TALK" LED lights up and when performing Key input, the Key touch sound is rung.
3. When pushing buttons in the following table 3-1, it is to be able to check the items of its number.
4. Immediately after entering test mode, the handset is in the ① state.
   It is to be able to change the state as you want by pushing the button applicable to the state.
5. To release the test mode is pushing "TALK" button, making "MODE" switch to "BATT SAVE" or turning power off.
   The memory functions, ID code, redial, memory dial etc. are not initialized.

3-1-2. Base Unit

1. To enter the test mode is turning power on while pressing "PAGE" button.
2. In the test mode, "LINE" LED lights up. (Continue to press "PAGE" button until the "LINE" LED lights up.)
3. In the test mode, every pressing "PAGE" button, the state changes in the numerical order given in the following table 3-2. It goes to ⑨, next returns to ①.
4. Immediately after entering the test mode, the base unit is in the ① state.
5. To release the test mode is turning power off.
   ID code is not initialized.

Table. 3-1. Handset Test Mode

No.	Button	Item	State
①	1	TX OUT & Frq ADJ	$\overline{TXB}$: L $\overline{RXB}$: H $\overline{MICMUT}$: L
②	2	TX MOD ADJ	$\overline{TXB}$: L $\overline{RXB}$: H $\overline{MICMUT}$: H
③	3	DATA DEV	$\overline{TXB}$: L $\overline{RXB}$: H $\overline{MICMUT}$: L 0000 (100 Hz) continuous output.
④	4	DTMF single tone.	$\overline{TXB}$: L $\overline{RXB}$: H $\overline{MICMUT}$: L $\overline{DTMFEN}$: L ROW 1 (697 Hz) Cotinuous output. (Note 1)
⑤	5	DTMF dual tone.	$\overline{TXB}$: L $\overline{RXB}$: H $\overline{MICMUT}$: L $\overline{DTMFEN}$: L DIAL 1 continuous output. (Note 2)
⑥	6	RX ADJ	$\overline{TXB}$: L $\overline{RXB}$: L SPMUTE: L
⑦	7		
⑧	8	BELL HIGH	From BELL HI, the bell sound continuous output.
⑨	9	BELL LOW	From BELL LO, the bell sound continuous output.
⑩	0		
⑪	#	BATTERY LOW INPUT	When the battery is low, buzzer is sounded. When the battery is charged, buzzer is stopped.
⑫	RECL	CHARGE INPUT	When the charge is on, buzzer is sounded. When the charge is off, buzzer is stopped.
⑬	RD/P	DATA INPUT	$\overline{RXB}$: L 1111 input (143 Hz − 200 Hz − 333 Hz): buzzer is sounded. In the other case, buzzer is stopped.

Note 1: By "∗" button, changes in the order.
ROW2 → ROW3 → ROW4 → COL1 → COL2 → COL3 → ROW1

Note 2: By "∗" button, changes in the order.
2 → 3 → 4 ... 7 → 8 → 9 → 0 → ∗ → # → 1.

Note 3: By "CHANNEL" Key, CH changes A ch → B ch → A ch...mutually.

Table 3-2. Base Unit Test Mode

No.	Item	State
①	TX OUT & Frq ADJ	$\overline{\text{TXBEN}}$: L $\overline{\text{RXMUTE}}$: L $\overline{\text{MODEN}}$: H
②	TX MOD ADJ	$\overline{\text{TXBEN}}$: L $\overline{\text{RXMUTE}}$: L $\overline{\text{MODEN}}$: L $\overline{\text{RLCONT}}$: L
③	DATA DEV	$\overline{\text{TXBEN}}$: L $\overline{\text{RXMUTE}}$: L $\overline{\text{MODEN}}$: H BELLON code continuous output.
④	RX TEL OUTPUT ADJ	$\overline{\text{TXBEN}}$: H $\overline{\text{RXMUTE}}$: H $\overline{\text{MODEN}}$: L $\overline{\text{RLCONT}}$: L
⑤	RX CHECK	$\overline{\text{TXBEN}}$: L $\overline{\text{RXMUTE}}$: H $\overline{\text{MODEN}}$: L $\overline{\text{RLCONT}}$: L
⑥	SQUELCH INPUT	$\overline{\text{RXMUTE}}$: H When there is squelch, "LINE" LED lights up. When there is not squelch, "LINE" LED goes off.
⑦	TONE/PULSE SW INPUT	$\overline{\text{RXMUTE}}$: H PULSE (L): "LINE" LED lights up. TONE (H): "LINE" LED goes off.
⑧	CHARGE INPUT	$\overline{\text{RXMUTE}}$: H CHARGE ON: "LINE" LED lights up. CHARGE OFF: "LINE" LED goes off.
⑨	BELL INPUT	$\overline{\text{RXMUTE}}$: H When there is bell, "LINE" LED lights up. When there is not bell, "LINE" LED goes off.

- CH changes by selecting PULSE or TONE.
  (Only Test Mode ①, ② ③ and ⑤. In other Test Modes, the last CH condition is kept.)
  PULSE : CH A (LOWER CH)
  TONE : CH B (HIGHER CH)

3-2. FREQUENCY TABLE

3-2-1. Base Unit

	CH	RX FREQ	TX FREQ	LOCAL FREQ
*	1	49.670	46.610	49.215
*	2	49.845	46.630	49.390
	3	49.860	46.670	49.405
*	4	49.770	46.710	49.315
*	5	49.875	46.730	49.420
	6	49.830	46.770	49.375
*	7	49.890	46.830	49.435
*	8	49.930	46.870	49.475
*	9	49.990	46.930	49.535
*	10	49.970	46.970	49.515

(MHz)

3-2-2. Hand Set

	CH	TX FREQ	RX FREQ	LOCAL FREQ
*	1	49.670	46.610	46.155
*	2	49.845	46.630	46.175
	3	49.860	46.670	46.215
*	4	49.770	46.710	46.255
*	5	49.875	46.730	46.275
	6	49.830	46.770	46.315
*	7	49.890	46.830	46.375
*	8	49.930	46.870	46.415
*	9	49.990	46.930	46.475
*	10	49.970	46.970	46.515

(MHz)

* mark CH are used.

CH Assortment

CH A	CH B
1 CH	4 CH
2 CH	5 CH
7 CH	10 CH
8 CH	9 CH

3-3. HANDSET SECTION

3-3-1. Transmitter Adjustment

Test Equipment Required:

Regulated DC Power Supply : 3.6 V
Dummy Load : 50 Ω
Oscilloscope
Frequency Counter : 49 MHz BAND
*Disconnect the antenna AT801.

Procedure:

1. Make the set to the test mode and push "1" key button. (TX OUT and FRQ ADJ state)
2. Adjust L608 and L609 to the maximum reading on the oscilloscope.
3. Connect antenna cable to the frequency counter.
4. Adjust L612 (CH A) to the specified frequency (see page 14) ± 100 Hz.
5. Push "CHANNEL" button. (change ; CH B)
6. Adjust L613 (CH B), to the specified frequency (see page 14) ± 100 Hz.
7. Push "CHANNEL" button. (change ; CH A)
8. Repeat items 2 to 7 several times.

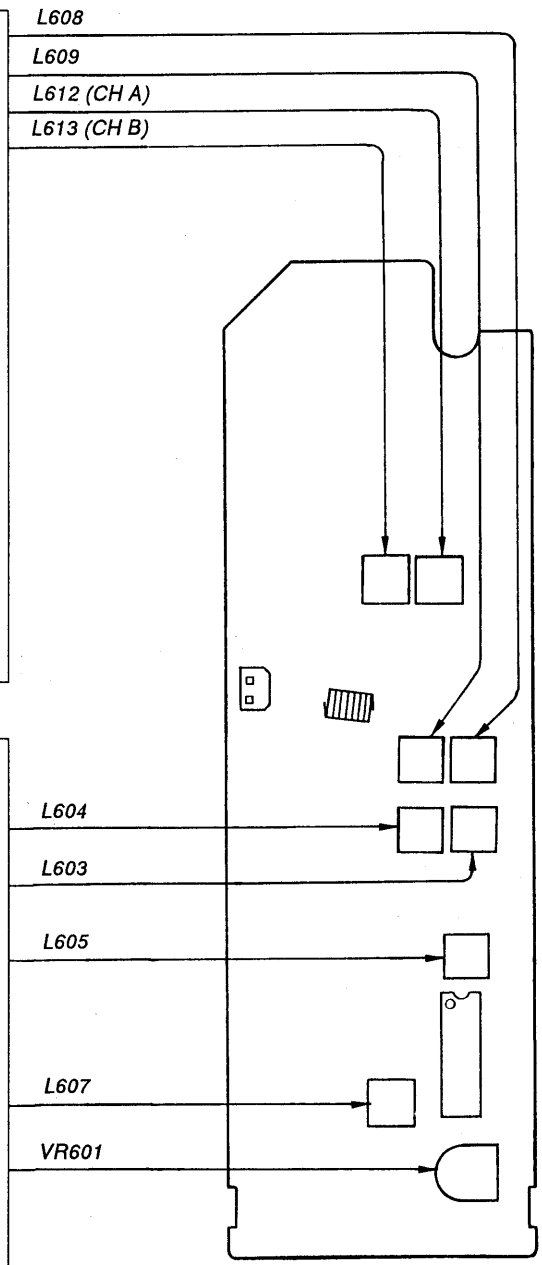
3-3-2. Receiver Adjustment

Test Equipment Required:

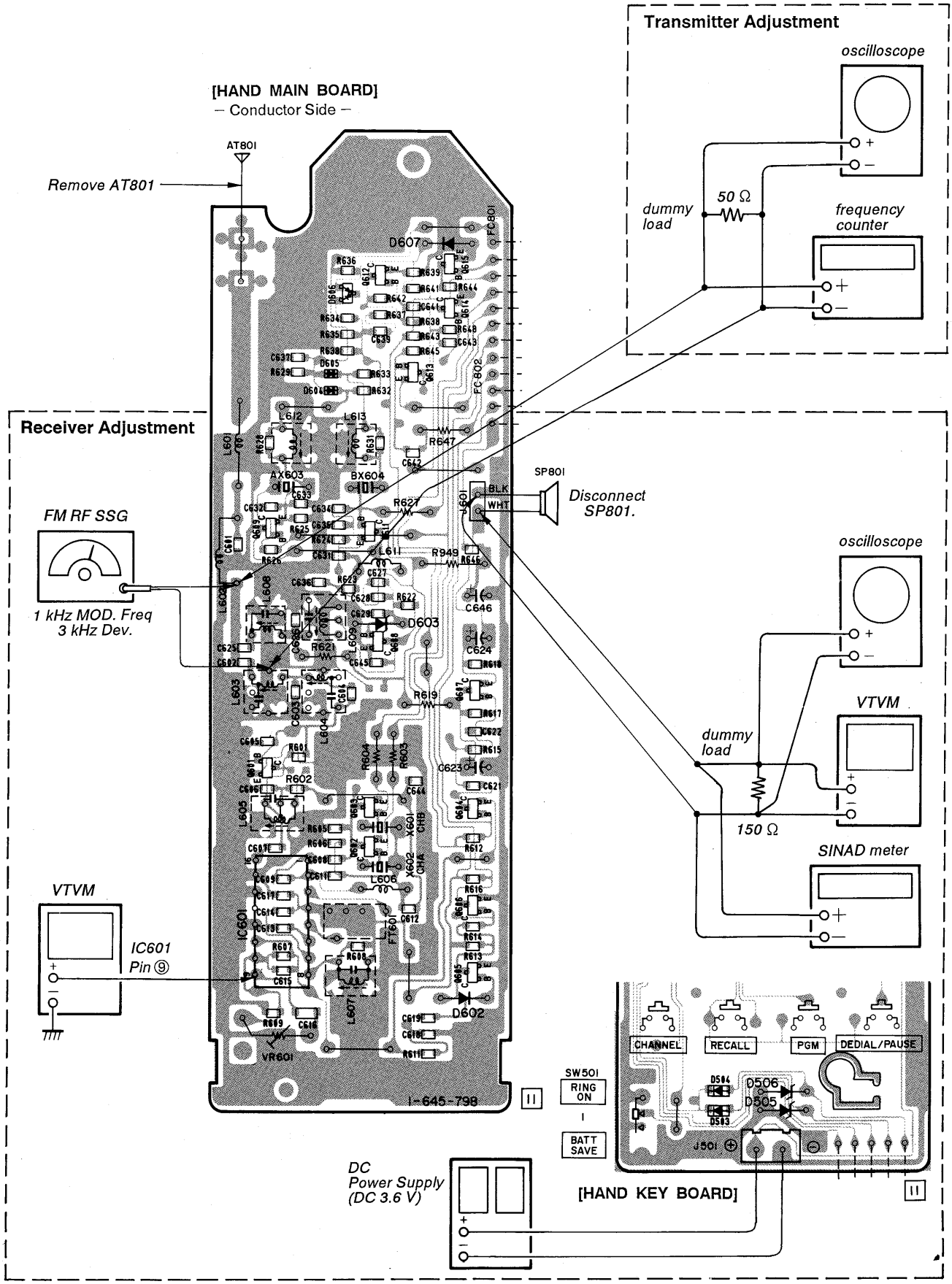
Regulated DC Power Supply : 3.6 V
Dummy Load : 150 Ω
FM RF SSG : 46 MHz BAND
modulation 1 kHz/3 kHz Dev.
VTVM
Oscilloscope
SINAD Meter
*Disconnect the speaker SP801
CH Mode : CH A

Procedure:

1. Make the set to the test mode and push "6" key button. (RX sensitivity ADJ state)
2. Set the SSG signal output to 1 mV, and to no-modulated condition.
3. Adjust L607 so that the discri voltage on Pin ⑨ of IC601 becomes 1.2 V.
4. Set the SSG to the standard modulated condition. (modulation 1 kHz, 3 kHz Dev.)
5. Adjust L603, 604, 605 so that the reading on the SINAD meter becomes the best.
6. Set the SSG signal output to 3 μV.
7. Repeat Step 5.
8. Set the SSG signal output to 1 μV.
9. Repeat Step 5.
10. Push "6" key button. (SPEAKER output ADJ state)
11. Set the SSG signal output to 1mV.
12. Adjust VR601 to 82 mV reading on VTVM.



[HAND MAIN BOARD]
– Component Side –


Transmitter Adjustment
oscilloscope
dummy load
50 Ω
frequency counter
[HAND MAIN BOARD]
– Conductor Side –
AT801
Remove AT801
Receiver Adjustment
FM RF SSG
1 kHz MOD. Freq
3 kHz Dev.
SP801
Disconnect SP801.
BLK
WHT
oscilloscope
VTVM
dummy load
150 Ω
SINAD meter
VTVM
IC601
Pin ⑨
SW501
RING ON
BATT SAVE
CHANNEL
RECALL
PGM
DEDIAL/PAUSE
[HAND KEY BOARD]
DC
Power Supply
(DC 3.6 V)
I-645-798

3-4. BASE UNIT SECTION

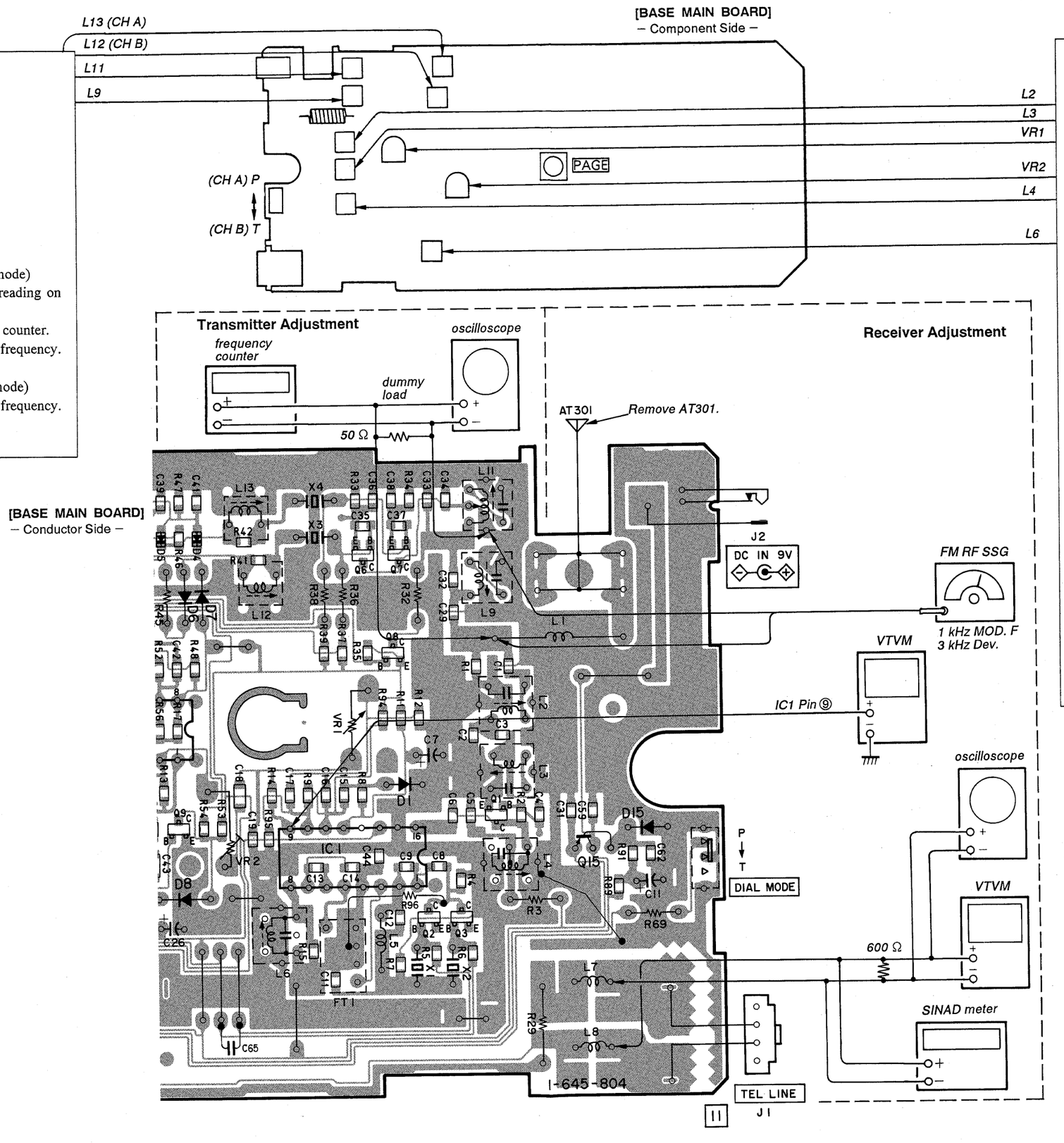
3-4-1. Transmitter Adjustment

Test Equipment Required:

AC Adaptor
Dummy Load : 50 Ω
Oscilloscope
Frequency Counter : 46 MHz BAND
*Disconnect the antenna AT301.

Procedure:

1. Make the set to the test mode. (Confirm the "LINE" LED lights up.)
2. Set the Pulse/Tone SW ; Pulse (CH A mode)
3. Adjust L9 and L11 to the maximum reading on the oscilloscope.
4. Connect antenna cable to the frequency counter.
5. Adjust L13 (CH A) to the specified frequency. (See page 14)
6. Set the Pulse/Tone SW ; Tone (CH B mode)
7. Adjust L12 (CH B) to the specified frequency. (See page 14)
8. Repeat items 2 to 7 several times.



3-4-2. Receiver Adjustment

Test Equipment Required:

AC Adaptor
Dummy Load : 600 Ω
FM RF SSG : 49 MHz BAND
Mod. 1 kHz/3 kHz Dev.
VTVM
Oscilloscope
SINAD Meter
*Disconnect the antenna AT301.
CH mode : CH A (Pulse/Tone SW ; Pulse)

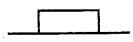
Procedure:

1. Make the set to the test mode. (Confirm the "LINE" LED lights up.)
2. PUSH "PAGE" button, three (3) times. (RX• TELOUT ADJ state.)
3. Set the SSG signal output to 1 mV, and to no-modulated condition.
4. Adjust L6 so that the discri voltage on Pin ⑨ of IC1 becomes 2.3 V.
5. Set the SSG to the standard modulated condition. (modulation 1 kHz, 3 kHz Dev.)
6. Adjust L2, 3, 4 so that the reading on the SINAD meter becomes the best.
7. Set the SSG signal output to 3 μV.
8. Repeat Step 6.
9. Set the SSG signal output to 1 μV.
10. Repeat Step 6.
11. Set the SSG signal output to 1mV and adjust VR2 so that the TEL output becomes – 0.5 dBm.
12. Set the SSG signal output to SINAD 10 dB.
13. Push "PAGE" button twice. (Squelch check state.)
14. Adjust VR1 so that the "LINE" LED goes off.

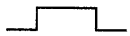
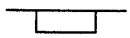
SECTION 4
DIAGRAMS

4-1. PORT FUNCTIONS

• HANDSET IC501 MB88644HPF PORT FUNCTIONS

Pin No.	Signal Name	I/O	Logic *	Port Form	Description	Operation	Remarks
1	BELLHI	I*/O*	IN H	CMOS	SOUND OUTPUT (LOUD)	NORMALLY: INPUT SOUND: H&L	
2	BELLLO	I*/O*	IN H	CMOS	SOUND OUTPUT (LOW)	NORMALLY: INPUT SOUND: H&L	
3	$\overline{\text{TXB}}$	I/O*	IN H	CMOS	TRANSMITTER POWER SUPPLY CONTROL	ON: L OFF: H	
4	$\overline{\text{RXB}}$	I/O*	IN H	CMOS	RECEIVER POWER SUPPLY CONTROL	ON: L OFF: H	
5	$\overline{\text{MICMUT}}$	I/O*	IN H	CMOS	MIC MUTE COTROL	ON: L OFF: H	
6	CH. B	I/O*	IN IN	CMOS	CH. B CONTROL	ON: H OFF: L	
7	CH. A	I/O*	IN IN	CMOS	CH. A CONTROL	ON: H OFF: L	
8	$\overline{\text{DTMFEN}}$	I/O*	IN IN	CMOS	DTMF OUTPUT CONTROL	ON OUTPUT: L EXCEPT OUTPUT: H	
9		IN			NOT USED		GND
10		IN			NOT USED		GND
11		IN			NOT USED		GND
12	$\overline{\text{BATLOW}}$	IN			BATTERY LOW INPUT	BATLOW: L NORMALLY: H	
13	DATAIN	IN			DATA INPUT		EXTERNAL PULL UP
14	MODESW	IN			MODE SWITCH INPUT (STAND-BY RELEASE INPUT)	RINGON: L BATSAV: H	EXTERNAL PULL UP
15	$\overline{\text{WAKEUP}}$	IN			INTERMITTENT RECEIVE START INPUT (STAND-BY RELEASE INPUT)	START: L	
16	$\overline{\text{KEYON}}$	IN			KEY INPUT (STAND-BY RELEASE INPUT)	ON PUSHING KEY: L	EXTERNAL PULL UP
17	$\overline{\text{DTMFOT}}$	OUT	L L		DTMF OUTPUT	NORMALLY: L	
18	VCC				Vcc (3.6 V)		
19	NC						OPEN
20	SPMUTE	OUT	H L	N-ch O. D	SPEAKER MUTE CONTROL	ON: H OFF: L	
21		OUT	H H	N-ch O. D	NOT USED		GND
22		OUT	H H	N-ch O. D	NOT USED		GND
23	CHG	I*/O	IN IN	CMOS	CHARGE INPUT (STAND-BY RELEASE INPUT)	ON: H OFF: L	
24	$\overline{\text{BATOFF}}$	I*/O	IN IN	CMOS	BATTERY CUT OFF SIGNAL INPUT (STAND-BY RELEASE INPUT)	CUT OFF: L NORMALLY: H	

*) UPPER COLUMN: LOGIC ON RESET
LOWER COLUMN: LOGIC ON STOP
**) Port Form N-ch O.D: H is OPEN

Pin No.	Signal Name	I/O	Logic *	Port Form	Description	Operation	Remarks
25		I*/O	IN IN	CMOS	NOT USED		GND
26		I*/O	IN IN	CMOS	NOT USED		GND
27	HLTCNT	I/O*	IN IN	CMOS	INTERMITTENT RECEIVING CPU START CIRCUIT CONTROL	ON CPU ACTIVATION ALWAYS H	
28	$\overline{COL1}$	I*/O	IN IN	CMOS	KEY MATRIX SCAN INPUT	ON PUSHING KEY: L	EXTERNAL PULL UP
29	$\overline{COL2}$	I*/O	IN IN	CMOS	KEY MATRIX SCAN INPUT	ON PUSHING KEY: L	EXTERNAL PULL UP
30	$\overline{COL3}$	I*/O	IN IN	CMOS	KEY MATRIX SCAN INPUT	ON PUSHING KEY: L	EXTERNAL PULL UP
31					(CPU TEST TERMINAL)		GND
32	DATAEN	I*/O*	IN IN	CMOS	DATA OUTPUT L: OUT ENABLE CONTROL H: IN		
33	DATAOT	I*/O*	IN IN	CMOS	DATA OUTPUT L: OUT H: IN		
34	$\overline{ROW1}$	I/O*	IN –	CMOS	KEY MATRIX SCAN OUTPUT		
35	$\overline{ROW2}$	I/O*	IN –	CMOS	KEY MATRIX SCAN OUTPUT		
36	$\overline{ROW3}$	OUT	H –	N-ch O. D	KEY MATRIX SCAN OUTPUT		
37	$\overline{ROW4}$	OUT	H –	N-ch O. D	KEY MATRIX SCAN OUTPUT		
38	$\overline{ROW5}$	OUT	H –	N-ch O. D	KEY MATRIX SCAN OUTPUT		
39	$\overline{ROW6}$	OUT	H –	N-ch O. D	KEY MATRIX SCAN OUTPUT		
40	X0	IN			CLOCK		
41	X1	OUT			3.583 MHz (1-4, 2-5, 7-10 CH) 3.579545 MHz (8-9 CH)		
42	VSS				VSS (GND)		
43	NC						OPEN
44	$\overline{RESET}$	I*/O		INTERNAL PULL UP			
45		OUT	H L	N-ch O. D	NOT USED	L OUTPUT	GND
46	$\overline{TLK\ LED}$	OUT	H L	N-ch O. D	TALK/BATT LOW LED CONTROL	ON: L OFF: H	
47		I/O*	– L	N-ch O. D	NOT USED	L OUTPUT	GND
48		I/O*	– L	N-ch O. D	NOT USED	L OUTPUT	GND

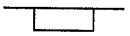
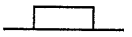
*) UPPER COLUMN: LOGIC ON RESET
LOWER COLUMN: LOGIC ON STOP
**) Port Form N-ch O.D: H is OPEN

• BASE UNIT IC005 LC6543H PORT FUNCTIONS

Pin	Signal Name	I/O	Logic *	Port Form	Description	Operation	Remarks
1		I*/O	H H	N – ch O. D	NOT USED		GND
2	VDD				VDD (+5V)		
3	$\overline{\text{RLCONT}}$	I/O*	H H	N-ch O. D	HOOK RELAY CONTROL	NORMALLY: H TALK: L	
4		I*/O	H H	N-ch O. D	NOT USED		GND
5		I*/O	H H	N-ch O. D	NOT USED		GND
6	$\overline{\text{RXMUTE}}$	I/O*	H H	N-ch O. D	RECEIVING MUTE CONTROL	ON: L OFF: H	
7		I*/O	H H	N-ch O. D	NOT USED		GND
8		I*/O	H H	N-ch O. D	NOT USED		GND
9	TONPLS	I*/O	H H	N-ch O. D	TONE /PULSE SWITCH INPUT	TONE: H PULSE: L	EXTERNAL PULL UP
10	SQIN	I*/O	H H	INTERNAL PULL UP	SQUELCH INPUT	IN: H NONE: L	
11	BELLIN	I*/O	H H	N-ch O. D	BELL FREQUENCY INPUT	NORMALLY: H	EXTERNAL PULL UP
12	$\overline{\text{CHG}}$	I*/O	H H	N-ch O. D	CHARGE INPUT	ON: L OFF: H	EXTERNAL PULL UP
13	$\overline{\text{PAGSW}}$	I*/O	H H	INTERNAL PULL UP	PAGE SWITCH INPUT	ON: L OFF: H	
14	HALT	I*/O	H H		FEED ALWAYS H FOR USING MICROPROCESSOR STAND-BY COMMAND		CONNECTED TO VDD
15		OUT			CLOCK		
16		IN			3.583 MHz		
17							GND
18	VSS				VSS (GND)		
19	$\overline{\text{RST}}$	IN			RESET INPUT		
20	$\overline{\text{LINLED}}$	I/O*	H H	N-ch O. D	LINE LED CONTROL	ON: L OFF: H	
21	$\overline{\text{LINLED}}$	I/O*	H H	N-ch O. D	LINE LED CONTROL	ON: L OFF: H	
22	CH. A	I/O*	H H	N-ch O. D	CH. A CONTROL	CH A: H CH B: L	
23	CH. B	I/O*	H H	N-ch O. D	CH. B CONTROL	CH A: L CH B: H	
24	$\overline{\text{TXBEN}}$	I/O*	L L	N-ch O. D	TRANSMITTER POWER SUPPLY CONTROL	ON: L OFF: H	

*) UPPER COLUMN: LOGIC ON RESET
LOWER COLUMN: LOGIC ON STOP

**) Port Form N-ch O.D: H is OPEN

Pin No.	Signal Name	I/O	Logic *	Port Form	Description	Operation	Remarks
25	$\overline{\text{MODEN}}$	I/O*	L H	N-ch O. D	MODULATION CONTROL	ON TALKING: L EXCEPT TALKING: H	
26	DATAOT	I/O*	L H	N-ch O. D	DATA OUTPUT		
27	DATAEN	I/O*	L H	N-ch O. D	DATA OUTPUT ENABLE CONTROL		
28		I*/O	H H	N-ch O. D	NOT USED		GND
29	$\overline{\text{PWROFF}}$	I*/O	H H	N-ch O. D	POWER SUPPLY CUT OFF SIGNAL INPUT	CUT OFF: L	
30	DATAIN	I*/O	H H	N-ch O. D	DATA INPUT		EXTERNAL PULL UP

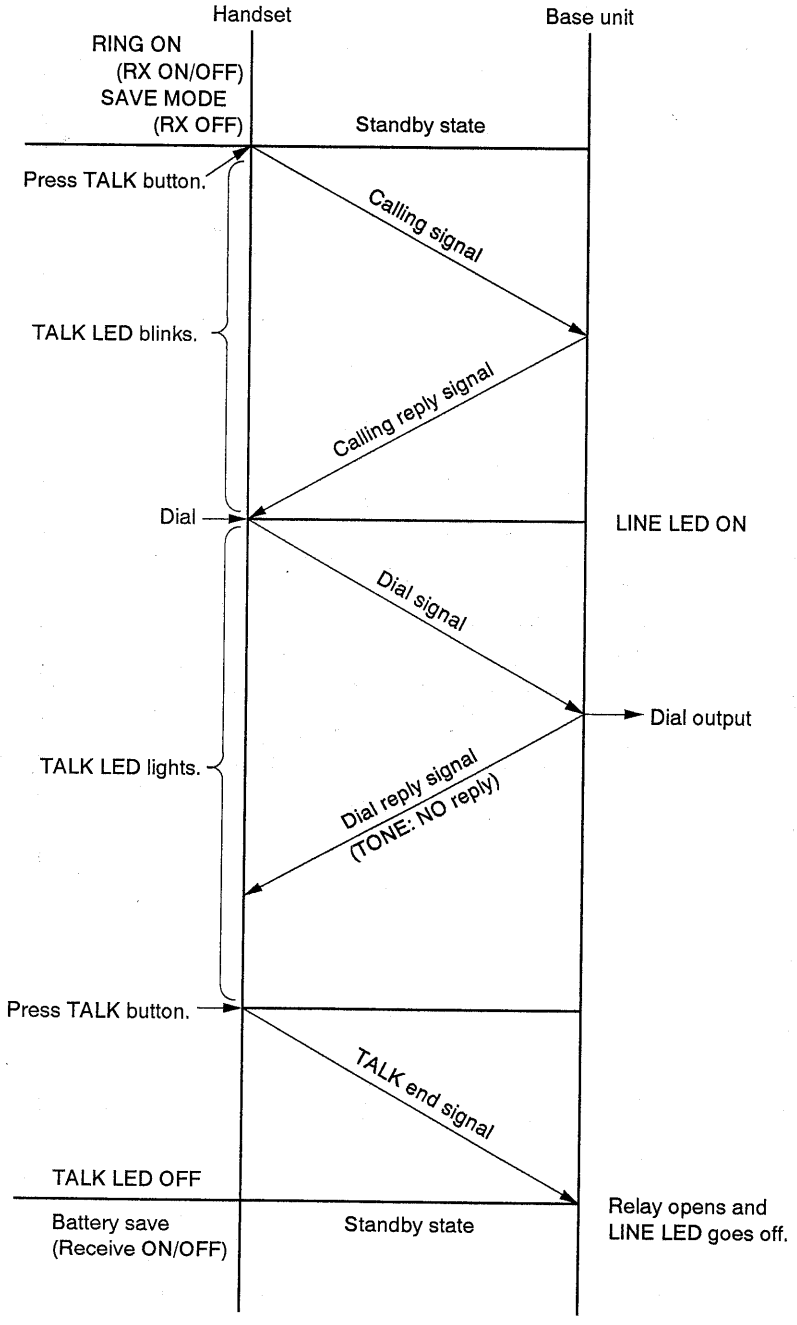
*) UPPER COLUMN: LOGIC ON RESET
LOWER COLUMN: LOGIC ON STOP

**) Port Form N-ch O.D: H is OPEN

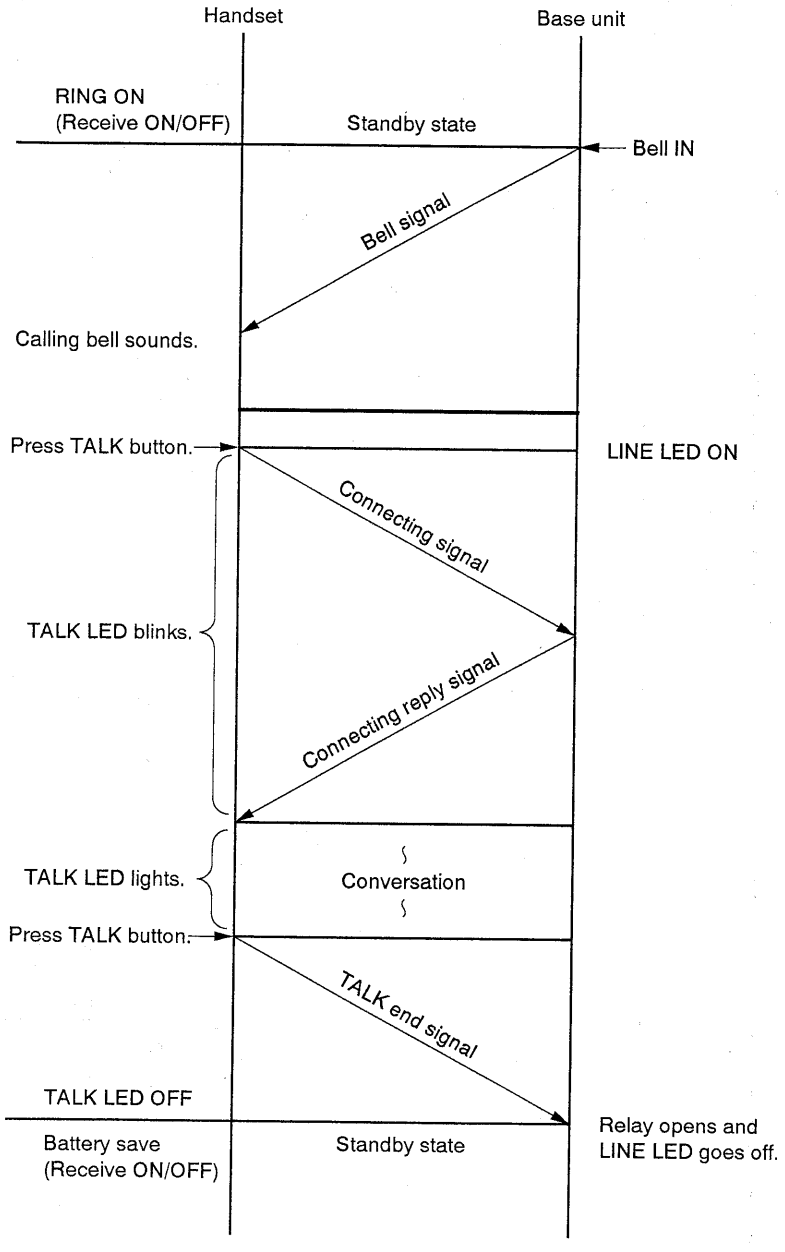
5. CONNECTION PROTOCOL

[Communicating Order]

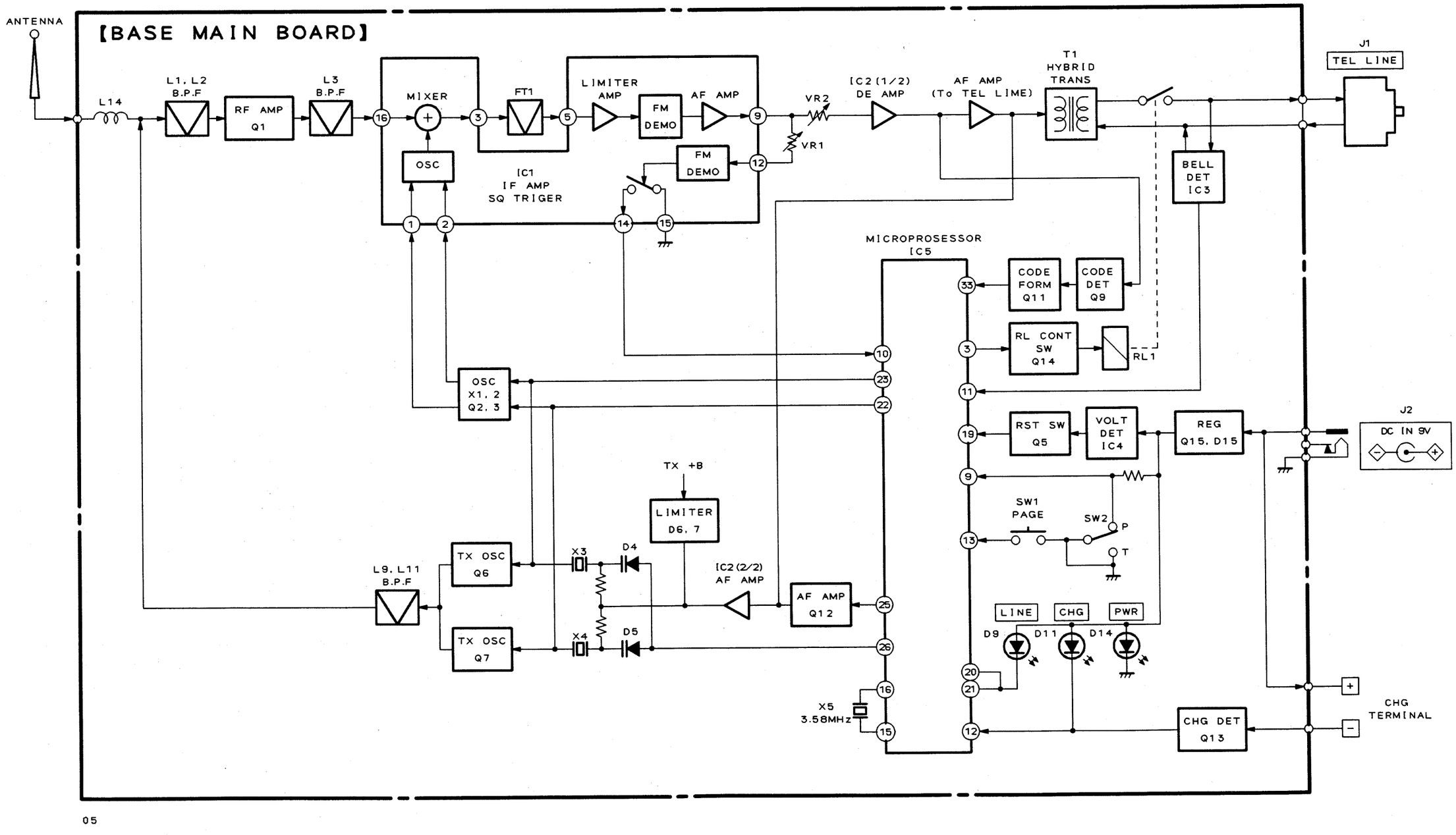
Making calls:



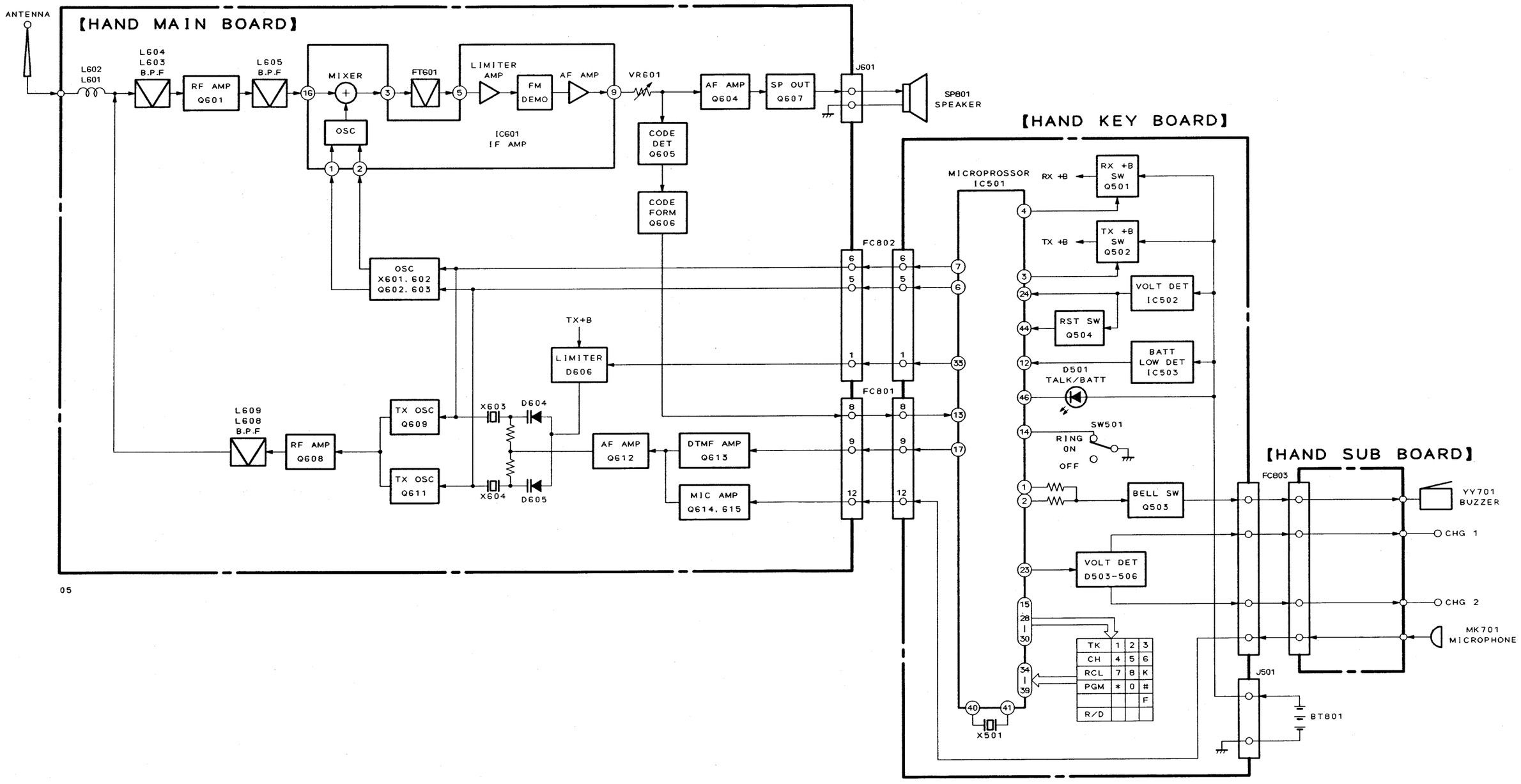
Receiving calls:



4-2. BASE UNIT BLOCK DIAGRAM

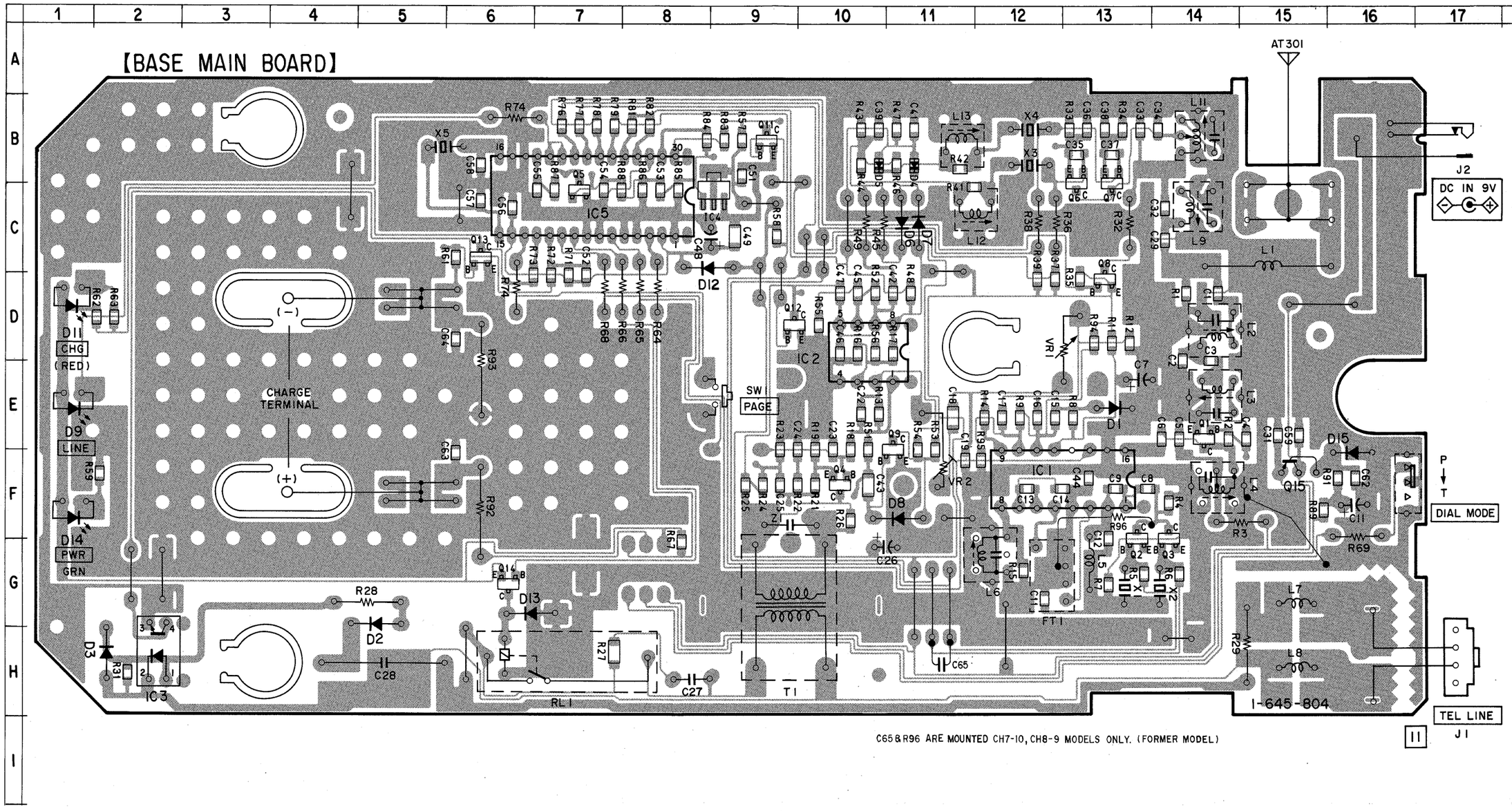


4-3. HANDSET BLOCK DIAGRAM



4-4. BASE UNIT SECTION PRINTED WIRING BOARD

• See Page 19 for notes and Semiconductor Lead Layouts.



C65&R96 ARE MOUNTED CH7-10, CH8-9 MODELS ONLY. (FORMER MODEL)

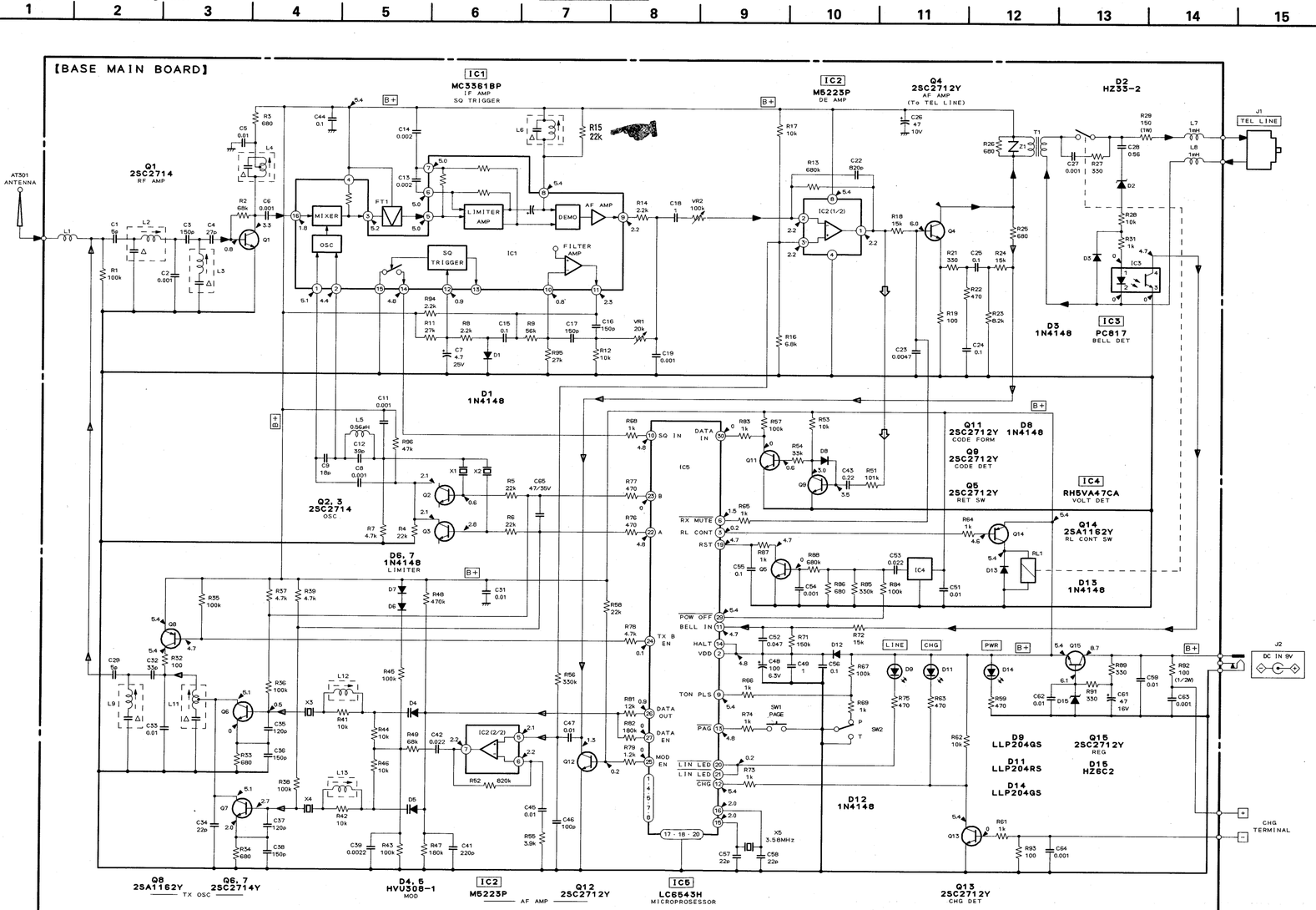
• **Semiconductor Location**

Ref. No.	Location	Ref. No.	Location	Ref. No.	Location
D001	E-13	IC001	F-12	Q009	E-11
D002	G-5	IC002	D-10	Q011	B-9
D003	H-2	IC003	H-2	Q012	D-9
D004	B-11	IC004	C-9	Q013	C-6
D005	B-10	IC005	C-7	Q014	G-6
D006	C-11			Q015	F-15
D007	C-11	Q001	E-14		
D008	F-11	Q002	G-13		
D009	E-1	Q003	G-14		
D011	D-1	Q004	F-10		
D012	C-8	Q005	C-7		
D013	G-6	Q006	C-13		
D014	F-1	Q007	C-13		
D015	F-16	Q008	C-13		

4-5. BASE UNIT SECTION SCHEMATIC DIAGRAM

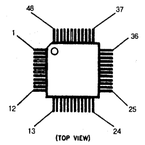
• See Page 20 for IC Block Diagrams.

REVISED

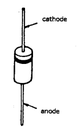


• Semiconductor Lead Layouts

MB88644HPF-G-135-BND

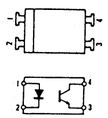


HZ6C2L

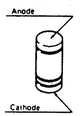


HVU308-1

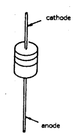
PC817



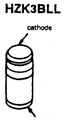
RLS-4148



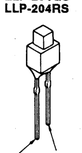
RD3.0ESB2
RD36ESB2
1SS119



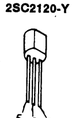
HZK3BLL



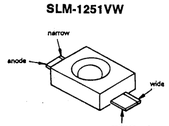
LLP-204GS
LLP-204RS



2SC2120-Y



SLM-1251VW



Note on Schematic Diagram:

- All capacitors are in μF unless otherwise noted. pF: μμF
  50 WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and ¼ W or less unless otherwise specified.
- B + : B + Line.
- Power voltage is dc 9 V and fed with regurated dc power supply from external power voltage jack.
- Voltages and waveforms are dc with respect to ground under no-signal (detuned) conditions.
  no mark: STANDBY mode
- Voltages are taken with a VOM (10 MΩ/V).
  Voltage variations may be noted due to normal production tolerances.
- Signal path.
  ▷ : RX
  ▶ : TX
  ▶ : bell
  ⇨ : Cord data

Note on Printed Wiring Board:

- o——— : parts extracted from the component side.
- ▒▒▒ : Pattern on the side which is seen.
- ▒▒▒ : Carbon pattern.

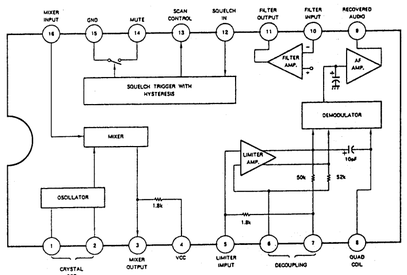
REVISED

4-6. HANDSET SECTION SCHEMATIC DIAGRAM

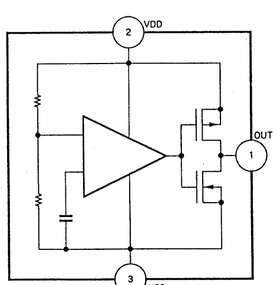
- See Page 19 for notes .

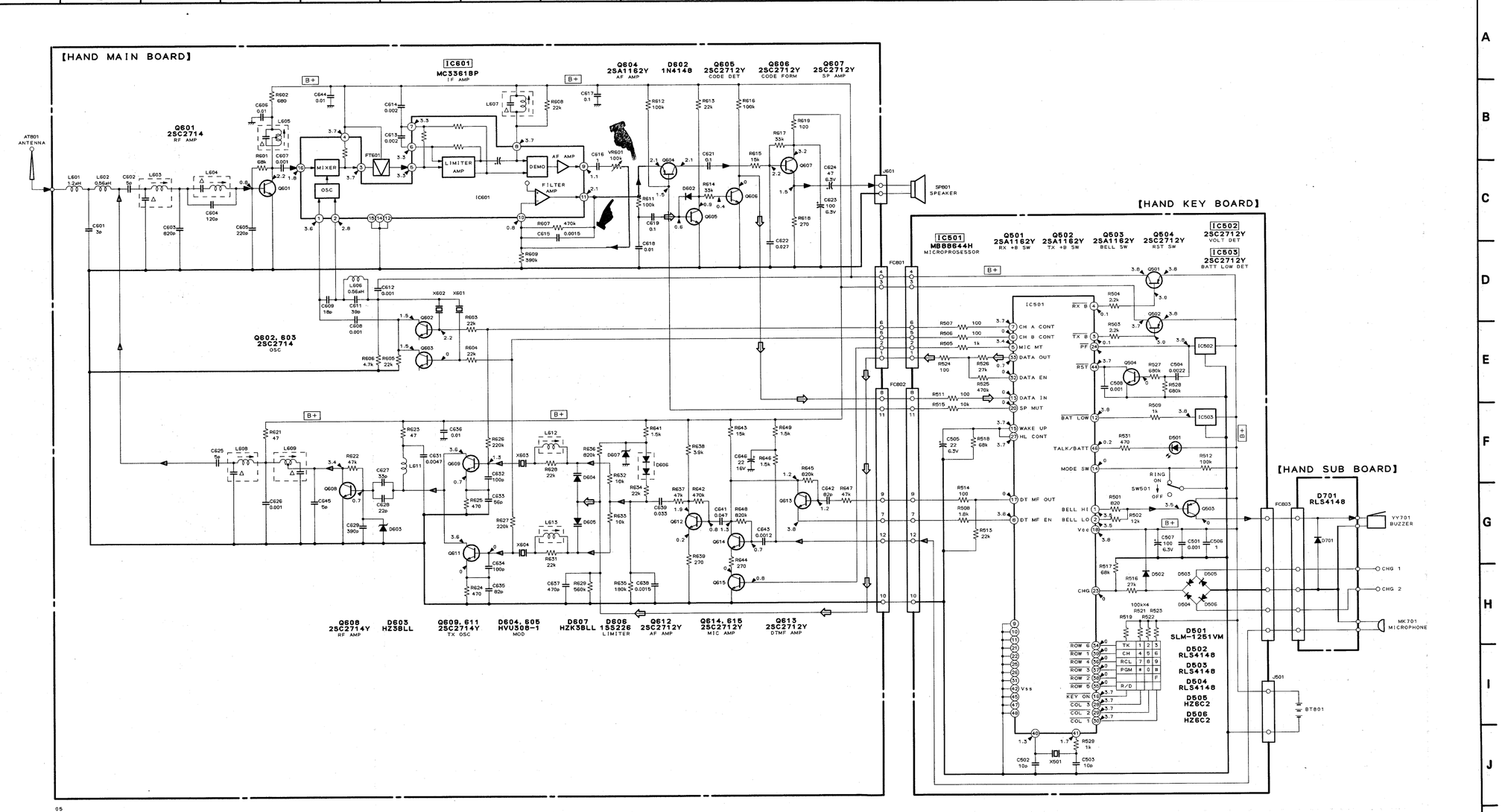
- IC Block Diagrams

IC001, IC601 MC3361BP



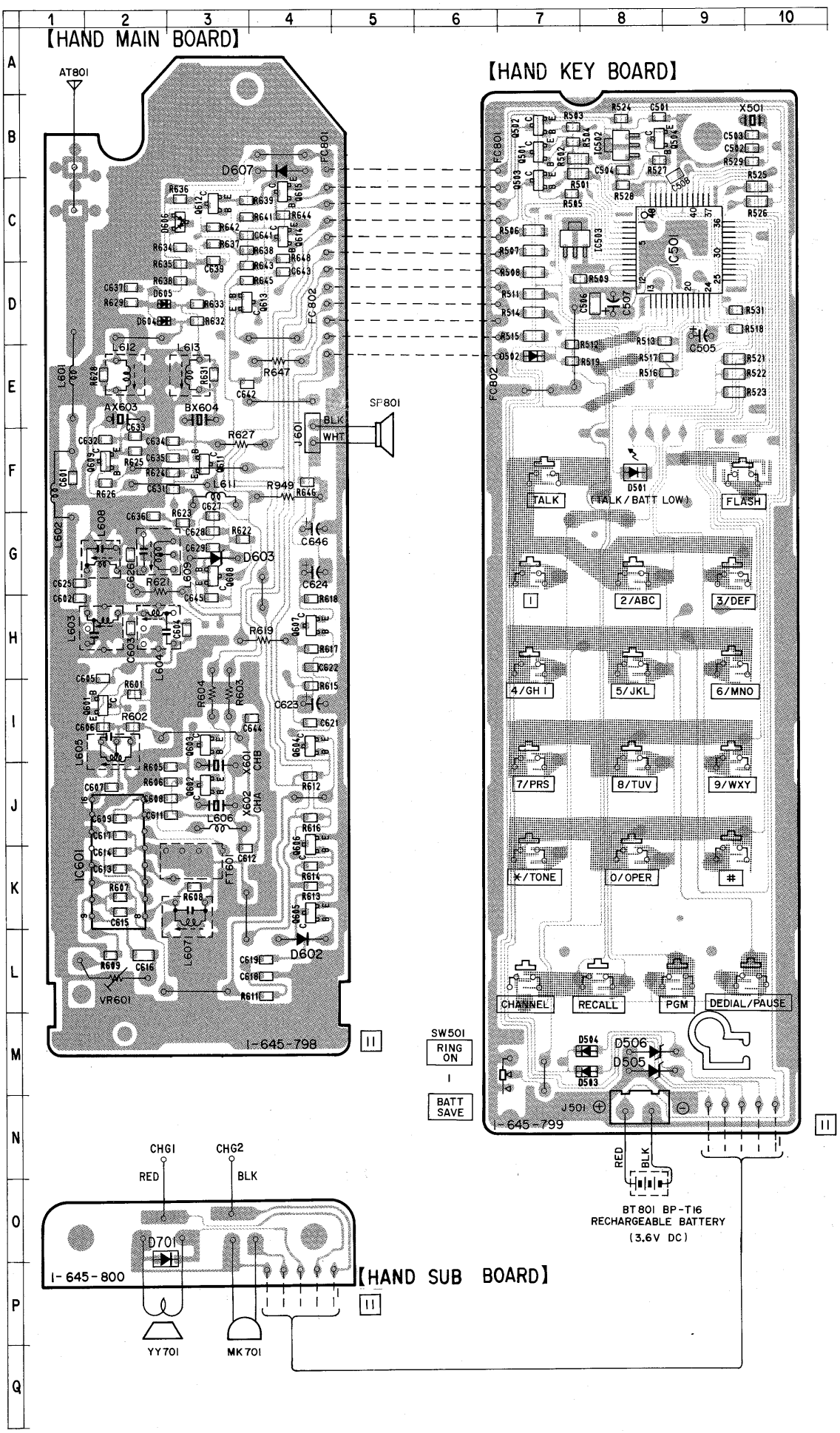
IC006 RH5V47CA
IC502 RH5VA28CA
IC503 RH5VA33CC





4-7. HANDSET SECTION PRINTED WIRING BOARD

• See Page 33 for notes and Semiconductor Lead Layouts.



• **Semiconductor Location**

Ref. No.	Location
D501	F-8
D502	E-7
D503	M-8
D504	M-8
D505	M-8
D506	M-8
D602	L-4
D603	G-3
D604	D-2
D605	D-2
D606	C-3
D607	B-4
D701	O-2
IC501	C-9
IC502	B-8
IC503	C-7
IC601	K-2
Q501	B-7
Q502	B-7
Q503	C-7
Q504	B-8
Q601	I-2
Q602	J-3
Q603	I-3
Q604	I-4
Q605	K-4
Q606	K-4
Q607	H-4
Q608	G-3
Q609	F-2
Q611	F-3
Q612	C-3
Q613	D-3
Q614	C-4
Q615	C-4

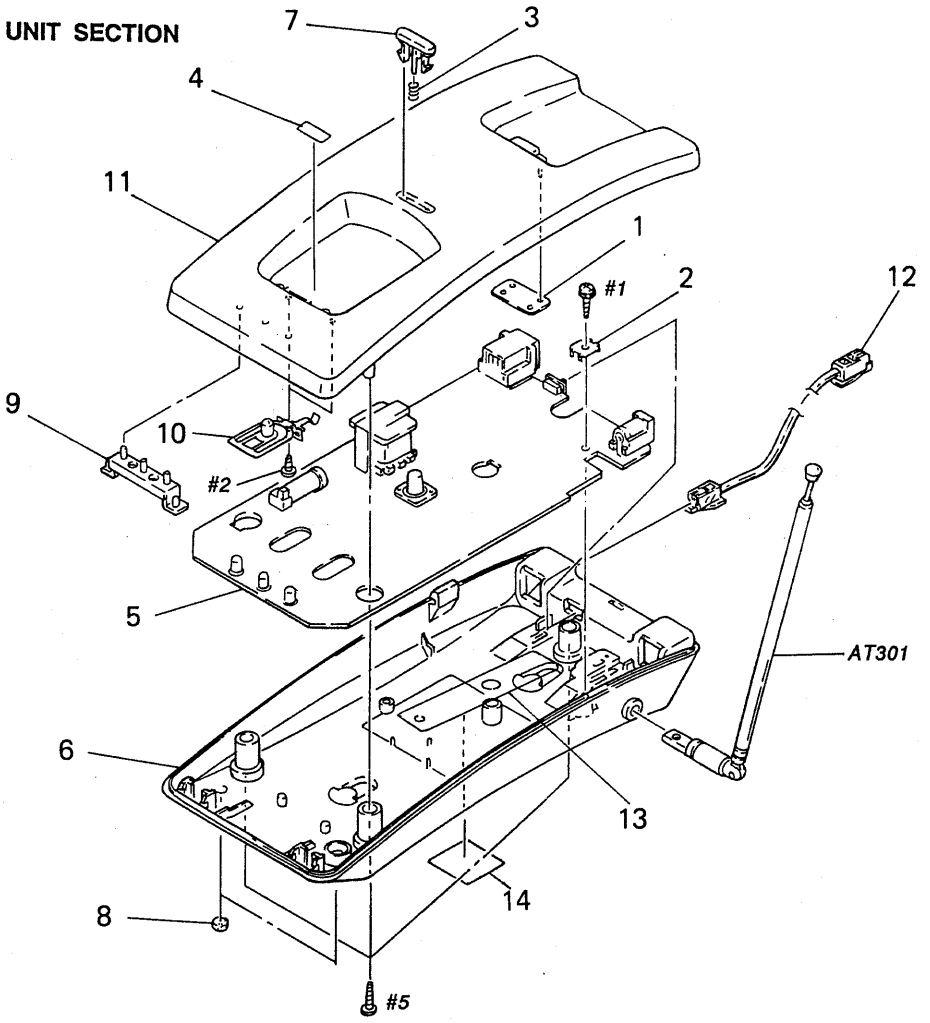
SEE ADDITIONAL INFORMATION

SECTION 5
EXPLODED VIEWS

NOTE:

- -XX and -X mean standardized parts, so they may have some difference from the original one.
- Color Indication of Appearance Parts
  Example:
  KNOB, BALANCE (WHITE) . . . (RED)
  ↑ ↑
  Parts Color Cabinet's Color
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- The mechanical parts with no reference number in the exploded views are not supplied.
- Hardware (# mark) list is given in the last of this parts list.

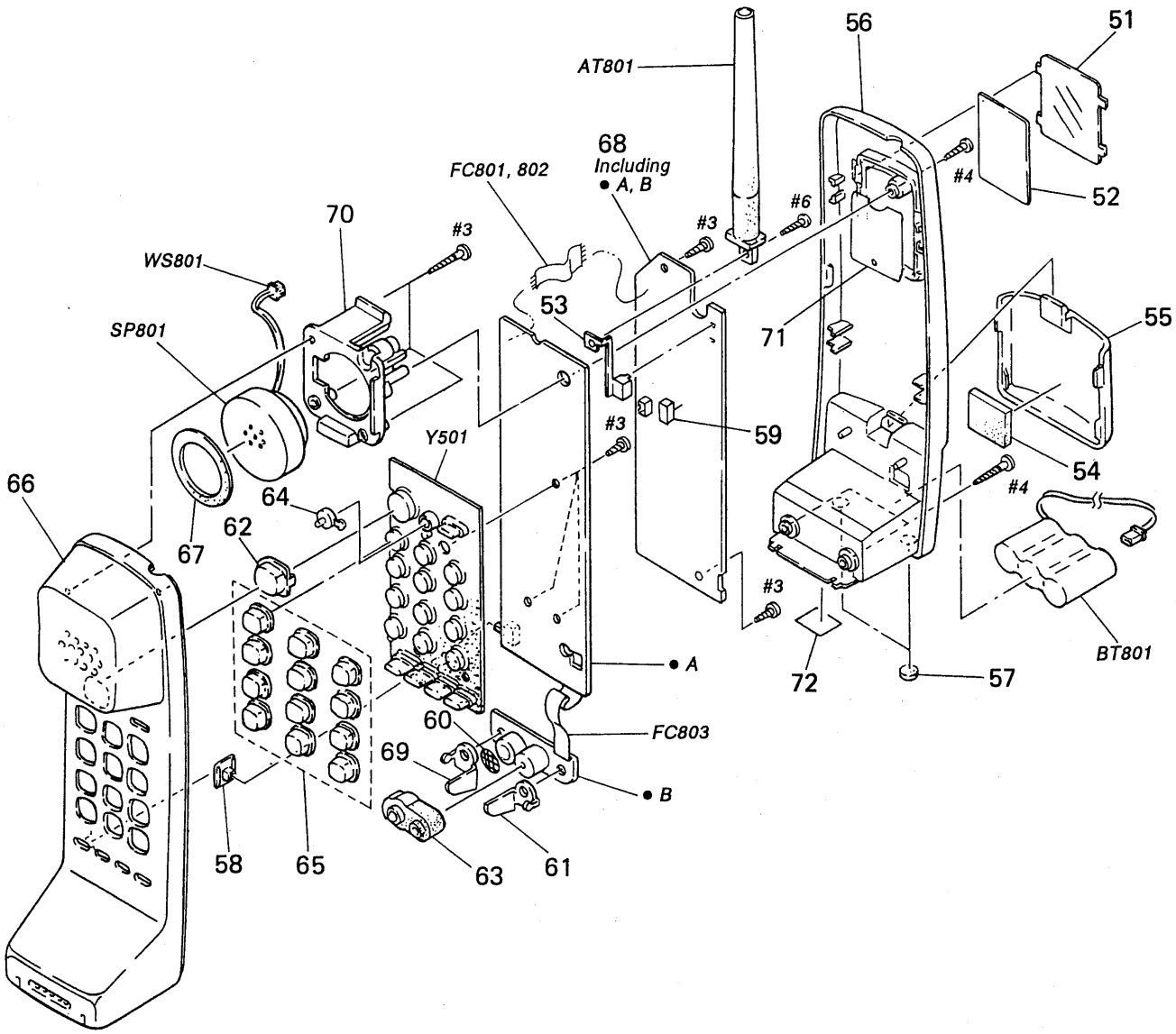
(1) BASE UNIT SECTION



Ref. No.	Part No.	Description	Remark
1	3-383-637-01	PLATE (B), BLIND	
2	3-371-238-01	TERMINAL BOARD (55), ANTENNA	
3	3-371-239-01	SPRING (55), COMPRESSION	
4	3-383-895-01	LABEL (CHG)	
* 5	A-3668-190-A	BASE MAIN BOARD, COMPLETE	
6	3-371-251-31	CABINET (LOWER), BASE	
7	3-371-232-01	BUTTON (PUSH)	
8	3-371-700-01	FOOT	
9	3-371-231-01	LENS, LED	
10	3-371-243-01	TERMINAL, CHARGE	
11	3-371-250-31	CABINET (UPPER), BASE	
12	1-696-666-11	CORD, TEL	
* 13	3-384-203-01	INSULATOR	
* 14	3-384-269-01	LABEL, MODEL NUMBER (CA2), BASE (Canadian)	
AT301	1-501-399-11	ANTENNA, TELESCOPIC	

SEE ADDITIONAL INFORMATION

(2) HANDSET SECTION



Ref. No.	Part No.	Description	Remark
51	3-371-234-01	COVER, MEMO	
52	3-383-649-01	PAPER, MEMO	
53	3-384-270-01	CONTACT, ANTENNA	
54	3-371-233-01	CUSHION	
55	3-383-645-01	COVER, BATTERY	
56	3-383-644-01	CABINET (REAR), HAND	
57	3-371-700-01	FOOT	
58	3-383-648-01	KNOB	
* 59	3-383-651-01	SPACER	
* 60	3-372-618-01	SPACER (MIC)	
61	3-371-228-01	TERMINAL (L), CHARGE	
62	3-395-192-41	BUTTON (TALK)	
63	3-371-230-01	HOLDER, MICROPHONE	
64	3-383-646-01	LENS, LED	
65	3-383-284-01	KEY, 12	

Ref. No.	Part No.	Description	Remark
66	3-383-643-01	CABINET (FRONT), HAND	
* 67	3-384-204-01	CUSHION, SPEAKER	
* 68	A-3615-511-A	HAND MAIN BOARD, COMPLETE	
69	3-371-229-01	TERMINAL (R), CHARGE	
70	3-383-647-01	HOLDER, SPEAKER	
* 71	3-383-650-01	PLATE (H), BLIND	
* 72	3-384-268-01	LABEL, MODEL NUMBER (CA2), HAND (Canadian)	
AT801	1-501-518-11	ANTENNA, HELICAL	
BT801	1-528-376-11	STORAGE BATTERY, NICKEL CADMIUM (BP-T16)	
FC801	1-696-714-11	CABLE, FLAT (6P)	
FC802	1-696-714-11	CABLE, FLAT (6P)	
FC803	1-696-715-11	CABLE, FLAT (5P)	
SP801	1-544-558-11	SPEAKER	
* WS801	1-950-883-11	HARNESS	
Y501	1-692-327-11	SWITCH, RUBBER KEY	

BASE MAIN

SECTION 6
ELECTRICAL PARTS LIST

NOTE:

- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- -XX and -X mean standardized parts, so they may have some difference from the original one.
- RESISTORS
  All resistors are in ohms.
  METAL: Metal-film resistor
  METAL OXIDE: Metal Oxide-film resistor
  F: nonflammable
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- SEMICONDUCTORS
  In each case, u: μ, for example:
  uA...: μA..., uPA...: μPA...,
  uPB...: μPB..., uPC...: μPC...,
  uPD...: μPD...
- CAPACITORS
  uF: μF
- COILS
  uH: μH

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

Les composants identifiés par une marque ⚠ sont critiques pour la sécurité.
Ne les remplacer que par une pièce portant le neméro spécifié.

When including parts by reference number, please include the board name.

Ref. No.	Part No.	Description			Remark
*	A-3668-190-A	BASE MAIN BOARD, COMPLETE			
		**********			
	3-371-238-01	TERMINAL BOARD (55), ANTENNA			
		< CAPACITOR >			
C001	1-163-088-00	CERAMIC CHIP	5PF		50V
C002	1-163-141-00	CERAMIC CHIP	0.001uF	5%	50V
C003	1-163-121-00	CERAMIC CHIP	150PF	5%	50V
C004	1-163-103-00	CERAMIC CHIP	27PF	5%	50V
C005	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C006	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C007	1-124-927-11	ELECT	4.7uF	20%	100V
C008	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C009	1-163-099-00	CERAMIC CHIP	18PF	5%	50V
C011	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C012	1-163-107-00	CERAMIC CHIP	39PF	5%	50V
C013	1-163-037-11	CERAMIC CHIP	0.022uF	10%	25V
C014	1-163-037-11	CERAMIC CHIP	0.022uF	10%	25V
C015	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C016	1-163-121-00	CERAMIC CHIP	150PF	5%	50V
C017	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C018	1-162-638-11	CERAMIC CHIP	1uF		16V
C019	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C022	1-163-008-11	CERAMIC CHIP	820PF	10%	50V
C023	1-163-017-00	CERAMIC CHIP	0.0047uF	5%	50V
C024	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C025	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C026	1-124-477-11	ELECT	47uF	20%	25V
C027	1-129-702-00	FILM	0.001uF	10%	630V
C028	1-104-575-11	CAP, FILM	0.56uF		
C029	1-163-088-00	CERAMIC CHIP	5PF		50V
C031	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C032	1-163-105-00	CERAMIC CHIP	33PF	5%	50V
C033	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C034	1-163-101-00	CERAMIC CHIP	22PF	5%	50V
C035	1-163-119-00	CERAMIC CHIP	120PF	5%	50V
C036	1-163-121-00	CERAMIC CHIP	150PF	5%	50V
C037	1-163-119-00	CERAMIC CHIP	120PF	5%	50V
C038	1-163-121-00	CERAMIC CHIP	150PF	5%	50V
C039	1-164-161-11	CERAMIC CHIP	0.0022uF	10%	100V
C041	1-163-125-00	CERAMIC CHIP	220PF	5%	50V
C042	1-163-037-11	CERAMIC CHIP	0.022uF	10%	25V
C043	1-163-081-00	CERAMIC CHIP	0.22uF		25V
C044	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C045	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C046	1-163-117-00	CERAMIC CHIP	100PF	5%	50V
C047	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C048	1-124-443-00	ELECT	100uF	20%	10V
C049	1-162-638-11	CERAMIC CHIP	1uF		16V
C051	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C052	1-163-035-00	CERAMIC CHIP	0.047uF		50V
C053	1-163-037-11	CERAMIC CHIP	0.022uF	10%	25V
C054	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C055	1-163-038-00	CERAMIC CHIP	0.1uF	10%	50V
C056	1-163-038-00	CERAMIC CHIP	0.1uF	10%	50V
C057	1-163-101-00	CERAMIC CHIP	22PF	5%	50V
C058	1-163-101-00	CERAMIC CHIP	22PF	5%	50V
C059	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C061	1-124-589-11	ELECT	47uF	20%	16V
C062	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C063	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C064	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
		< DIODE >			
D001	8-719-911-19	DIODE 1SS119			
D002	8-719-110-83	DIODE RD36ES-B2			
D003	8-719-911-19	DIODE 1SS119			
D004	8-719-017-48	DIODE HVU308-1			
D005	8-719-017-48	DIODE HVU308-1			
D006	8-719-911-19	DIODE 1SS119			
D007	8-719-911-19	DIODE 1SS119			

Ref. No.	Part No.	Description	Remark
D008	8-719-911-19	DIODE 1SS119	
D009	8-719-029-97	LED LLP-204GS	
D011	8-719-029-96	LED LLP-204RS	
D012	8-719-911-19	DIODE 1SS119	
D013	8-719-911-19	DIODE 1SS119	
D014	8-719-029-97	LED LLP-204GS	
D015	8-719-916-68	DIODE HZ6C2L	
		< FILTER >	
FT001	1-527-392-00	FILTER, CERAMIC	
		< IC >	
IC001	8-759-040-97	IC MC3361BP	
IC002	8-759-602-44	IC M5223P	
IC003	8-719-902-56	PHOTO COUPLER PC817	
IC004	8-759-041-02	IC RH5V47CA	
IC005	8-759-170-78	IC LC6543H-4A77	
		< JACK >	
J001	1-573-752-11	JACK (DC IN 9V)	
J002	1-580-727-11	JACK (TEL LINE)	
		< COIL >	
L001	1-424-563-11	COIL 1.1uH	
L002	1-424-558-11	COIL	
L003	1-424-559-11	COIL	
L004	1-424-560-11	COIL	
L005	1-414-164-11	INDUCTOR 0uH	
L006	1-404-781-11	COIL, IF	
L007	1-408-105-00	INDUCTOR 1uH	
L008	1-408-105-00	INDUCTOR 1uH	
L009	1-424-561-11	COIL	
L011	1-424-562-11	COIL	
L012	1-406-267-11	COIL, OSCILLATION	
L013	1-406-267-11	COIL, OSCILLATION	
		< TRANSISTOR >	
Q001	8-729-200-86	TRANSISTOR 2SC2714-O	
Q002	8-729-200-86	TRANSISTOR 2SC2714-O	
Q003	8-729-200-86	TRANSISTOR 2SC2714-O	
Q004	8-729-271-22	TRANSISTOR 2SC2712-G	
Q005	8-729-271-22	TRANSISTOR 2SC2712-G	
Q006	8-729-200-87	TRANSISTOR 2SC2714-Y	
Q007	8-729-200-87	TRANSISTOR 2SC2714-Y	
Q008	8-729-216-22	TRANSISTOR 2SA1162-G	
Q009	8-729-271-22	TRANSISTOR 2SC2712-G	
Q011	8-729-271-22	TRANSISTOR 2SC2712-G	
Q012	8-729-271-22	TRANSISTOR 2SC2712-G	
Q013	8-729-271-22	TRANSISTOR 2SC2712-G	
Q014	8-729-216-22	TRANSISTOR 2SA1162-G	
Q015	8-729-212-02	TRANSISTOR 2SC2120-Y	
		< RESISTOR >	
R001	1-216-097-00	METAL CHIP 100K 5% 1/10W	
R002	1-216-093-00	METAL CHIP 68K 5% 1/10W	
R003	1-249-415-11	CARBON 680 5% 1/4W	
R004	1-216-081-00	METAL CHIP 22K 5% 1/10W	
R005	1-216-081-00	METAL CHIP 22K 5% 1/10W	
R006	1-216-081-00	METAL CHIP 22K 5% 1/10W	
R007	1-216-065-00	METAL CHIP 4.7K 5% 1/10W	
R008	1-216-057-00	METAL CHIP 2.2K 5% 1/10W	
R009	1-216-091-00	METAL CHIP 56K 5% 1/10W	
R011	1-216-083-00	METAL CHIP 27K 5% 1/10W	
R012	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R013	1-216-117-00	METAL CHIP 680K 5% 1/10W	
R014	1-216-057-00	METAL CHIP 2.2K 5% 1/10W	
R015	1-216-081-00	METAL CHIP 22K 5% 1/10W	
R016	1-216-069-00	METAL CHIP 6.8K 5% 1/10W	
R017	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R018	1-216-077-00	METAL CHIP 15K 5% 1/10W	
R019	1-216-025-00	METAL CHIP 100 5% 1/10W	
R021	1-216-037-00	METAL CHIP 330 5% 1/10W	
R022	1-216-041-00	METAL CHIP 470 5% 1/10W	
R023	1-216-071-00	METAL CHIP 8.2K 5% 1/10W	
R024	1-216-077-00	METAL CHIP 15K 5% 1/10W	
R025	1-216-093-00	METAL CHIP 68K 5% 1/10W	
R026	1-216-045-00	METAL CHIP 680 5% 1/10W	
R027	1-216-186-00	METAL GLAZE 330 5% 1/8W	
R028	1-202-975-11	RES, METAL OXIDE 10K	
R029	1-215-864-00	METAL OXIDE 150 5% 1W F	
R031	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R032	1-249-405-11	CARBON 100 5% 1/4W	
R033	1-216-045-00	METAL CHIP 680 5% 1/10W	
R034	1-216-045-00	METAL CHIP 680 5% 1/10W	
R035	1-216-097-00	METAL CHIP 100K 5% 1/10W	
R036	1-249-437-11	CARBON 47K 5% 1/4W	
R037	1-216-065-00	METAL CHIP 4.7K 5% 1/10W	
R038	1-249-437-11	CARBON 47K 5% 1/4W	
R039	1-216-065-00	METAL CHIP 4.7K 5% 1/10W	
R041	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R042	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R043	1-216-097-00	METAL CHIP 100K 5% 1/10W	
R044	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R045	1-249-437-11	CARBON 47K 5% 1/4W	
R046	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R047	1-216-103-00	METAL CHIP 180K 5% 1/10W	
R048	1-216-113-00	METAL CHIP 470K 5% 1/10W	

BASE MAIN | HAND KEY

Ref. No.	Part No.	Description			Remark
R049	1-249-439-11	CARBON	68K	5%	1/4W
R051	1-216-097-00	METAL CHIP	100K	5%	1/10W
R052	1-216-119-00	METAL CHIP	820K	5%	1/10W
R053	1-216-073-00	METAL CHIP	10K	5%	1/10W
R054	1-216-085-00	METAL CHIP	33K	5%	1/10W
R055	1-216-063-00	METAL CHIP	3.9K	5%	1/10W
R056	1-216-109-00	METAL CHIP	330K	5%	1/10W
R057	1-216-097-00	METAL CHIP	100K	5%	1/10W
R058	1-216-081-00	METAL CHIP	22K	5%	1/10W
R059	1-216-041-00	METAL CHIP	470	5%	1/10W
R061	1-216-049-00	METAL CHIP	1K	5%	1/10W
R062	1-216-073-00	METAL CHIP	10K	5%	1/10W
R063	1-216-041-00	METAL CHIP	470	5%	1/10W
R064	1-249-417-11	CARBON	1K	5%	1/4W
R065	1-249-417-11	CARBON	1K	5%	1/4W
R066	1-249-417-11	CARBON	1K	5%	1/4W
R067	1-216-097-00	METAL CHIP	100K	5%	1/10W
R068	1-249-417-11	CARBON	1K	5%	1/4W
R069	1-249-417-11	CARBON	1K	5%	1/4W
R071	1-216-101-00	METAL CHIP	150K	5%	1/10W
R072	1-216-077-00	METAL CHIP	15K	5%	1/10W
R073	1-216-049-00	METAL CHIP	1K	5%	1/10W
R074	1-249-417-11	CARBON	1K	5%	1/4W
R075	1-249-413-11	CARBON	470	5%	1/4W
R076	1-216-041-00	METAL CHIP	470	5%	1/10W
R077	1-216-041-00	METAL CHIP	470	5%	1/10W
R078	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
R079	1-216-051-00	METAL CHIP	1.2K	5%	1/10W
R081	1-216-075-00	METAL CHIP	12K	5%	1/10W
R082	1-216-103-00	METAL CHIP	180K	5%	1/10W
R083	1-216-049-00	METAL CHIP	1K	5%	1/10W
R084	1-216-097-00	METAL CHIP	100K	5%	1/10W
R085	1-216-109-00	METAL CHIP	330K	5%	1/10W
R086	1-216-117-00	METAL CHIP	680K	5%	1/10W
R087	1-216-049-00	METAL CHIP	1K	5%	1/10W
R088	1-216-117-00	METAL CHIP	680K	5%	1/10W
R089	1-216-037-00	METAL CHIP	330	5%	1/10W
R091	1-216-037-00	METAL CHIP	330	5%	1/10W
R092	1-247-739-11	CARBON	100	5%	1/2W
R093	1-247-739-11	CARBON	100	5%	1/2W
R094	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R095	1-216-083-00	METAL CHIP	27K	5%	1/10W

< RELAY >

RL001	1-515-735-11	RELAY

Ref. No.	Part No.	Description	Remark
		< SWITCH >	
SW001	1-572-882-11	SWITCH (1 KEY) (PAGE)	
SW002	1-572-883-11	SWITCH (DIAL MODE)	
		< TRANSFORMER >	
T001	1-424-054-11	TRANSFORMER, LF	
		< VARIABLE RESISTOR >	
VR001	1-228-725-00	RES, ADJ, CERAMIC CARBON 22K	
VR002	1-228-728-00	RES, ADJ, CERAMIC CARBON 100K	
		< VIBRATOR >	
X001	1-579-809-11	VIBRATOR, CRYSTAL (49.3150MHz)	(CH4)
X001	1-579-810-11	VIBRATOR, CRYSTAL (49.4200MHz)	(CH5)
X001	1-579-441-11	VIBRATOR, CRYSTAL (49.5150MHZ)	(CH10)
X001	1-579-440-11	VIBRATOR, CRYSTAL (49.5350MHZ)	(CH9)
X002	1-579-438-11	VIBRATOR, CRYSTAL (49.2150MHz)	(CH1)
X002	1-579-808-11	VIBRATOR, CRYSTAL (49.3900MHz)	(CH2)
X002	1-579-811-11	VIBRATOR, CRYSTAL (49.4350MHz)	(CH7)
X002	1-579-439-11	VIBRATOR, CRYSTAL (49.4750MHz)	(CH8)
X003	1-567-997-11	VIBRATOR, CRYSTAL (15.5700MHz)	(CH4)
X003	1-567-998-11	VIBRATOR, CRYSTAL (15.5766MHz)	(CH5)
X003	1-577-003-11	VIBRATOR, CRYSTAL (15.6566MHz)	(CH10)
X003	1-577-002-11	VIBRATOR, CRYSTAL (15.6433MHz)	(CH9)
X004	1-567-995-11	VIBRATOR, CRYSTAL (15.5367MHz)	(CH1)
X004	1-567-996-11	VIBRATOR, CRYSTAL (15.5433MHz)	(CH2)
X004	1-567-999-11	VIBRATOR, CRYSTAL (15.6100MHz)	(CH7)
X004	1-577-001-11	VIBRATOR, CRYSTAL (15.6233MHz)	(CH8)
X005	1-579-195-11	VIBRATOR, CRYSTAL (3.583MHz)	
		< CAPACITOR >	
Z001	1-161-055-00	CERAMIC 0.022uF 10% 50V	

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1-645-799-11 HAND KEY BOARD

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< CAPACITOR >

C501	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C502	1-163-093-00	CERAMIC CHIP	10PF	5%	50V
C503	1-163-093-00	CERAMIC CHIP	10PF	5%	50V
C504	1-164-161-11	CERAMIC CHIP	0.0022uF	10%	100V
C505	1-131-379-00	TANTALUM	22uF	10%	10V
C506	1-162-638-11	CERAMIC CHIP	1uF		16V
C507	1-124-443-00	ELECT	100uF	20%	10V
C508	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V

Ref. No.	Part No.	Description			Remark
		< DIODE >			
D501	8-719-991-95	LED SLM-1251VWT			
D502	8-719-976-19	DIODE RLS-4148			
D503	8-719-976-19	DIODE RLS-4148			
D504	8-719-976-19	DIODE RLS-4148			
D505	8-719-910-68	DIODE HZ6C2L			
D506	8-719-910-68	DIODE HZ6C2L			
		< FLAT CABLE >			
FC801	1-696-714-11	CABLE, FLAT (6P)			
FC802	1-696-714-11	CABLE, FLAT (6P)			
FC803	1-696-715-11	CABLE, FLAT (5P)			
		< IC >			
IC501	8-759-093-85	IC MB88644HPF-G-135-BND			
IC502	8-759-511-38	IC RH5VA28CA			
IC503	8-759-998-74	IC RH5VA33CC			
		< JACK >			
J501	1-573-753-11	JACK (2P)			
		< TRANSISTOR >			
Q501	8-729-216-22	TRANSISTOR 2SA1162-G			
Q502	8-729-216-22	TRANSISTOR 2SA1162-G			
Q503	8-729-216-22	TRANSISTOR 2SA1162-G			
Q504	8-729-271-22	TRANSISTOR 2SC2712-G			
		< RESISTOR >			
R501	1-216-196-00	METAL GLAZE	820	5%	1/8W
R502	1-216-224-00	METAL GLAZE	12K	5%	1/8W
R503	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R504	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R505	1-216-049-00	METAL CHIP	1K	5%	1/10W
R506	1-216-174-00	METAL GLAZE	100	5%	1/8W
R507	1-216-174-00	METAL GLAZE	100	5%	1/8W
R508	1-216-204-00	METAL GLAZE	1.8K	5%	1/8W
R509	1-216-049-00	METAL CHIP	1K	5%	1/10W
R511	1-216-174-00	METAL GLAZE	100	5%	1/8W
R512	1-216-097-00	METAL CHIP	100K	5%	1/10W
R513	1-216-081-00	METAL CHIP	22K	5%	1/10W
R514	1-216-174-00	METAL GLAZE	100	5%	1/8W
R515	1-216-222-00	METAL GLAZE	10K	5%	1/8W
R516	1-216-083-00	METAL CHIP	27K	5%	1/10W
R517	1-216-093-00	METAL CHIP	68K	5%	1/10W
R518	1-216-093-00	METAL CHIP	68K	5%	1/10W
R519	1-216-097-00	METAL CHIP	100K	5%	1/10W
R521	1-216-246-00	METAL GLAZE	100K	5%	1/8W
R522	1-216-246-00	METAL GLAZE	100K	5%	1/8W

Ref. No.	Part No.	Description			Remark
R523	1-216-246-00	METAL GLAZE	100K	5%	1/8W
R524	1-216-025-00	METAL CHIP	100	5%	1/10W
R525	1-216-262-00	METAL GLAZE	470K	5%	1/8W
R526	1-216-232-00	METAL GLAZE	27K	5%	1/8W
R527	1-216-117-00	METAL CHIP	680K	5%	1/10W
R528	1-216-117-00	METAL CHIP	680K	5%	1/10W
R529	1-216-049-00	METAL CHIP	1K	5%	1/10W
R531	1-216-041-00	METAL CHIP	470	5%	1/10W
		< SWITCH >			
SW501	1-571-377-11	SWITCH, SLIDE (RING ON/BATT SAVE)			
		< VIBRATOR >			
X501	1-579-446-11	VIBRATOR, CRYSTAL (3.583MHz) (CH1-4, 2-5, 7-10)			
X501	1-578-771-11	VIBRATOR, CRYSTAL (3.579545MHz) (CH8-9)			
		< SWITCH >			
Y501	1-692-327-11	SWITCH, RUBBER KEY			
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*	A-3615-511-A	HAND MAIN BOARD, COMPLETE **********			
		< CAPACITOR >			
C601	1-163-086-00	CERAMIC CHIP	3PF		50V
C602	1-163-088-00	CERAMIC CHIP	5PF		50V
C603	1-163-139-00	CERAMIC CHIP	820PF	5%	50V
C604	1-163-119-00	CERAMIC CHIP	120PF	5%	50V
C605	1-163-125-00	CERAMIC CHIP	220PF	5%	50V
C606	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C607	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C608	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C609	1-163-099-00	CERAMIC CHIP	18PF	5%	50V
C611	1-163-107-00	CERAMIC CHIP	39PF	5%	50V
C612	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C613	1-163-037-11	CERAMIC CHIP	0.022uF	10%	25V
C614	1-163-037-11	CERAMIC CHIP	0.022uF	10%	25V
C615	1-163-011-11	CERAMIC CHIP	0.0015uF	10%	50V
C616	1-162-638-11	CERAMIC CHIP	1uF		16V
C617	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C618	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C619	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C621	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C622	1-163-986-00	CERAMIC CHIP	0.027uF	10%	25V
C623	1-124-443-00	ELECT	100uF	20%	10V
C624	1-124-126-00	ELECT	47uF	20%	10V
C625	1-163-088-00	CERAMIC CHIP	5PF		50V

HAND MAIN

Ref. No.	Part No.	Description			Remark
C626	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C627	1-163-105-00	CERAMIC CHIP	33PF	5%	50V
C628	1-163-101-00	CERAMIC CHIP	22PF	5%	50V
C629	1-163-131-00	CERAMIC CHIP	390PF	5%	50V
C631	1-163-017-00	CERAMIC CHIP	0.0047uF	5%	50V
C632	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C633	1-163-245-11	CERAMIC CHIP	56PF	5%	50V
C634	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C635	1-163-115-00	CERAMIC CHIP	82PF	5%	50V
C636	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C637	1-163-133-00	CERAMIC CHIP	470PF	5%	50V
C638	1-163-011-11	CERAMIC CHIP	0.0015uF	10%	50V
C639	1-163-989-11	CERAMIC CHIP	0.033uF	10%	25V
C641	1-163-809-11	CERAMIC CHIP	0.047uF	10%	25V
C642	1-163-117-00	CERAMIC CHIP	100PF	5%	50V
C643	1-163-010-11	CERAMIC CHIP	0.0012uF	10%	50V
C644	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C645	1-163-088-00	CERAMIC CHIP	5PF		50V
		< DIODE >			
D601	8-719-109-63	DIODE RD3.0ES-B2			
D602	8-719-911-19	DIODE 1SS119			
D603	8-719-109-63	DIODE RD3.0ES-B2			
D604	8-719-017-48	DIODE HVU308-1			
D605	8-719-017-48	DIODE HVU308-1			
D606	8-719-800-76	DIODE 1SS226			
D607	8-719-017-45	DIODE HZK3BLL			
		< FILTER >			
FT601	1-527-392-00	FILTER, CERAMIC			
		< IC >			
IC601	8-759-040-97	IC MC3361BP			
		< JACK >			
J601	1-573-754-11	JACK (2P)			
		< COIL >			
L601	1-414-166-11	INDUCTOR 0uH			
L602	1-414-164-11	INDUCTOR 0uH			
L603	1-426-426-11	COIL (RF)			
L604	1-424-466-11	COIL (FILTER)			
L605	1-402-801-11	COIL			
L606	1-414-164-11	INDUCTOR 0uH			
L607	1-404-781-11	COIL, IF			
L608	1-426-425-11	COIL (RF)			
L609	1-402-802-11	COIL			

Ref. No.	Part No.	Description			Remark
L611	1-422-359-11	COIL, FM			
L612	1-402-800-11	COIL			
L613	1-402-800-11	COIL			
		< TRANSISTOR >			
Q601	8-729-200-86	TRANSISTOR 2SC2714-O			
Q602	8-729-200-86	TRANSISTOR 2SC2714-O			
Q603	8-729-200-86	TRANSISTOR 2SC2714-O			
Q604	8-729-216-22	TRANSISTOR 2SA1162-G			
Q605	8-729-271-22	TRANSISTOR 2SC2712-G			
Q606	8-729-271-22	TRANSISTOR 2SC2712-G			
Q607	8-729-271-22	TRANSISTOR 2SC2712-G			
Q608	8-729-200-87	TRANSISTOR 2SC2714-G			
Q609	8-729-200-87	TRANSISTOR 2SC2714-G			
Q611	8-729-200-87	TRANSISTOR 2SC2714-G			
Q612	8-729-271-22	TRANSISTOR 2SC2712-G			
Q613	8-729-271-22	TRANSISTOR 2SC2712-G			
Q614	8-729-271-22	TRANSISTOR 2SC2712-G			
Q615	8-729-271-22	TRANSISTOR 2SC2712-G			
		< RESISTOR >			
R601	1-216-093-00	METAL CHIP	68K	5%	1/10W
R602	1-216-045-00	METAL CHIP	680	5%	1/10W
R603	1-249-433-11	CARBON	22K	5%	1/4W
R604	1-249-433-11	CARBON	22K	5%	1/4W
R605	1-216-081-00	METAL CHIP	22K	5%	1/10W
R606	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
R607	1-216-113-00	METAL CHIP	470K	5%	1/10W
R608	1-216-081-00	METAL CHIP	22K	5%	1/10W
R609	1-216-111-00	METAL CHIP	390K	5%	1/10W
R611	1-216-097-00	METAL CHIP	100K	5%	1/10W
R612	1-216-097-00	METAL CHIP	100K	5%	1/10W
R613	1-216-081-00	METAL CHIP	22K	5%	1/10W
R614	1-216-085-00	METAL CHIP	33K	5%	1/10W
R615	1-216-077-00	METAL CHIP	15K	5%	1/10W
R616	1-216-097-00	METAL CHIP	100K	5%	1/10W
R617	1-216-085-00	METAL CHIP	33K	5%	1/10W
R618	1-216-035-00	METAL CHIP	270	5%	1/10W
R619	1-249-405-11	CARBON	100	5%	1/4W
R621	1-249-401-11	CARBON	47	5%	1/4W
R622	1-216-089-00	METAL CHIP	47K	5%	1/10W
R623	1-216-017-00	METAL CHIP	47	5%	1/10W
R624	1-216-041-00	METAL CHIP	470	5%	1/10W
R625	1-216-041-00	METAL CHIP	470	5%	1/10W
R626	1-216-105-00	METAL CHIP	220K	5%	1/10W
R627	1-247-887-00	CARBON	220K	5%	1/4W
R628	1-216-081-00	METAL CHIP	22K	5%	1/10W
R629	1-216-115-00	METAL CHIP	560K	5%	1/10W

REVISED

HAND MAIN **HAND SUB**

Ref. No.	Part No.	Description			Remark
R631	1-216-081-00	METAL CHIP	22K	5%	1/10W
R632	1-216-073-00	METAL CHIP	10K	5%	1/10W
R633	1-216-073-00	METAL CHIP	10K	5%	1/10W
R634	1-216-081-00	METAL CHIP	22K	5%	1/10W
R635	1-216-103-00	METAL CHIP	180K	5%	1/10W
R636	1-216-119-00	METAL CHIP	820K	5%	1/10W
R637	1-216-089-00	METAL CHIP	47K	5%	1/10W
R638	1-216-063-00	METAL CHIP	3.9K	5%	1/10W
R639	1-216-035-00	METAL CHIP	270	5%	1/10W
R641	1-216-053-00	METAL CHIP	1.5K	5%	1/10W
R642	1-216-113-00	METAL CHIP	470K	5%	1/10W
R643	1-216-077-00	METAL CHIP	15K	5%	1/10W
R644	1-216-035-00	METAL CHIP	270	5%	1/10W
R645	1-216-119-00	METAL CHIP	820K	5%	1/10W
R646	1-216-053-00	METAL CHIP	1.5K	5%	1/10W
R647	1-249-437-11	CARBON	47K	5%	1/4W
R648	1-216-119-00	METAL CHIP	820K	5%	1/10W
		< VARIABLE RESISTOR >			
VR601	1-228-728-00	RES, ADJ, CERAMIC CARBON 100K			
		< VIBRATOR >			
X601	1-579-813-11	VIBRATOR, CRYSTAL (46.2550MHz) (CH4)			
X601	1-579-798-11	VIBRATOR, CRYSTAL (46.2750MHz) (CH5)			
X601	1-579-445-11	VIBRATOR, CRYSTAL (46.5150MHz) (CH10)			
X601	1-579-444-11	VIBRATOR, CRYSTAL (46.4750MHz) (CH9)			
X602	1-579-442-11	VIBRATOR, CRYSTAL (46.1550MHz) (CH1)			
X602	1-579-812-11	VIBRATOR, CRYSTAL (46.1750MHZ) (CH2)			
X602	1-579-799-11	VIBRATOR, CRYSTAL (46.3750MHZ) (CH7)			
X602	1-579-443-11	VIBRATOR, CRYSTAL (46.4150MHZ) (CH8)			
X603	1-579-803-11	VIBRATOR, CRYSTAL (16.5567MHZ) (CH1)			
X603	1-579-800-11	VIBRATOR, CRYSTAL (16.6150MHZ) (CH2)			
X603	1-579-802-11	VIBRATOR, CRYSTAL (16.6300MHz) (CH7)			
X603	1-579-805-11	VIBRATOR, CRYSTAL (16.6433MHz) (CH8)			
X604	1-579-804-11	VIBRATOR, CRYSTAL (16.5900MHZ) (CH4)			
X604	1-579-801-11	VIBRATOR, CRYSTAL (16.6250MHz) (CH5)			
X604	1-579-806-11	VIBRATOR, CRYSTAL (16.6567MHZ) (CH10)			
X604	1-579-807-11	VIBRATOR, CRYSTAL (16.6633MHz) (CH9)			

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1-645-800-11 HAND SUB BOARD

****

< BUZZER >

YY701 1-529-103-11 BUZZER

< DIODE >

D701 8-719-976-19 DIODE RLS-4148

< MICROPHONE >

MK701 1-542-169-11 MICROPHONE

****

Ref. No.	Part No.	Description	Remark
		MISCELLANEOUS	
		**********	
AT301	1-501-399-11	ANTENNA, TELESCOPIC	
AT801	1-501-518-11	ANTENNA, HELICAL	
SP801	1-544-558-11	SPEAKER	
* WS801	1-950-883-11	HARNESS	

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ACCESSORIES & PACKING MATERIALS

****

⚠	1-466-861-11	ADAPTOR, AC (AC-T35) (Canadian)
⚠	1-466-860-11	ADAPTOR, AC (AC-T35) (US)
	3-380-966-01	SCREW (WALL HOOK)
	3-380-967-01	SPACER (WALL HOOK)
*	3-382-919-01	INDIVIDUAL CARTON (US)
	3-383-649-01	PAPER, MEMO
*	3-383-771-01	INDIVIDUAL CARTON (Canadian)
*	3-383-652-01	CUSHION
*	3-701-616-00	BAG, POLYETHYLENE
	3-755-613-21	MANUAL, INSTRUCTION (ENGLISH) (US)
	1-696-666-11	CORD, TEL
	1-528-376-11	STORAGE BATTERY, NICKEL CADMIUM (BP-T16)
	3-755-613-31	MANUAL, INSTRUCTION (ENGLISH/FRENCH) (Canadian)

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HARDWARE LIST

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#1	7-682-650-09	SCREW +PS 3X12
#2	7-685-132-19	SCREW +BTP 2.6X5 TYPE2 N-S
#3	7-685-134-19	SCREW +BTP 2.6X8 TYPE2 N-S
#4	7-685-137-19	SCREW +BTP 2.6X14 TYPE2 N-S
#5	7-685-648-79	SCREW +BTP 3X12 TYPE2 N-S
#6	7-685-138-19	SCREW +BTP 2.6X16 TYPE2 N-S

Note:	Note:
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le neméro spécifié.

9-957-341-12
Including 9-957-341-81
9-957-341-91
9-957-341-92

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SPP-57

SONY
SERVICE MANUAL

US Model
Canadian Model

SUPPLEMENT-2

File this Supplement with the Service Manual.

We wish to announce that a black model also has been introduced.

Page	Incorrect				Added			
	Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
38	6	3-371-251-31	CABINET (LOWER), BASE		6	3-371-251-31	CABINET (LOWER), BASE (CREAM)	
					6	3-371-251-41	CABINET (LOWER), BASE (BLACK) (US)	
	7	3-371-232-01	BUTTON (PUSH)		7	3-371-232-01	BUTTON (PUSH) (CREAM)	
					7	3-371-232-11	BUTTON (PUSH) (BLACK) (US)	
	11	3-371-250-31	CABINET (UPPER), BASE		11	3-371-250-31	CABINET (UPPER), BASE (CREAM)	
					11	3-371-250-41	CABINET (UPPER), BASE (BLACK) (US)	
39	55	3-383-645-01	COVER, BATTERY		55	3-383-645-01	COVER, BATTERY (CREAM)	
					55	3-383-645-11	COVER, BATTERY (BLACK) (US)	
	56	3-383-644-01	CABINET (REAR), HAND		56	3-383-644-01	CABINET (REAR), HAND (CREAM)	
					56	3-383-644-11	CABINET (REAR), HAND (BLACK) (US)	
	58	3-383-648-01	KNOB		58	3-383-648-01	KNOB (CREAM)	
					58	3-383-648-11	KNOB (BLACK) (US)	
	62	3-395-192-41	BUTTON (TALK)		62	3-395-192-41	BUTTON (TALK) (CREAM)	
					62	3-395-192-31	BUTTON (TALK) (BLACK) (US)	
	65	3-383-284-01	KEY, 12		65	3-383-284-01	KEY, 12 (CREAM)	
					65	3-383-284-11	KEY, 12 (BLACK) (US)	
	66	3-383-643-01	CABINET (FRONT), HAND		66	3-383-643-01	CABINET (FRONT), HAND (CREAM)	
					66	3-383-643-11	CABINET (FRONT), HAND (BLACK) (US)	
	70	3-383-647-01	HOLDER, SPEAKER		70	3-383-647-01	HOLDER, SPEAKER (CREAM)	
					70	3-383-647-11	HOLDER, SPEAKER (BLACK) (US)	
	AT801	1-501-518-11	ANTENNA, HELICAL		AT801	1-501-518-11	ANTENNA, HELICAL (CREAM)	
					AT801	1-501-519-11	ANTENNA, HELICAL (BLACK) (US)	
	Y501	1-692-327-11	SWITCH, RUBBER KEY		Y501	1-692-327-11	SWITCH, RUBBER KEY (CREAM)	
					Y501	1-692-327-21	SWITCH, RUBBER KEY (BLACK) (US)	

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